Infrastructure Development in China: The Six Roads of Chongqing

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CERTIFICATE OF ORIGINAL AUTHORSHIP

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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Abbreviations

ABC	Agricultural Bank of China
AMC	Asset management corporations
BNA	Binhai New Area
BT	Build and transfer
BOT	Build, operate and transfer
BOC	Bank of China
CADZ	Chongqing Airport Development Zone
CBWR	Chongqing Bureau of Water Resources
CCOB	China Construction Bank
CCB	Chongqing Communications Bureau
CHCB	Chongqing Construction Bureau
CCP	Chinese Communist Party
CDB	China Development Bank
CDIC	Chongqing Development Investment Corporation
CEIC	Chongqing Energy Investment Corporation
CEDC	Chongqing Expressway Development Corporation
CETDZ	Chongqing Economic Technology Development Zone
CFB	Chongqing Financial Bureau
CHTDZ	Chongqing High-Tech Development Zone
CIC	China Investment Corporation
CRBCL	Chongqing Road & Bridge Company Limited
CRC	China Railway Corporation
CQREG	Chongqing Road and Engineering Group

CREG	Chongqing Real Estate Group
CSASAC	Chongqing State-Owned Assets Supervisory and Administrative Commission
CTTIC	Chongqing Transportation and Tour Investment Company
CUCIC	Chongqing Urban Construction Investment Corporation
CWWCG	Chongqing Water Works Controlling Group
CWRIC	Chongqing Water Resources Investment Company
FCC	Financial complementary conglomerates
FDI	Foreign direct investment
GCC	Guangdong Communications Corporation
GDP	Gross domestic product
GFCF	Gross fixed capital formation
ICBC	Industrial and Commercial Bank of China
LDC	Land developer corporation
LDFP	Lianglu Duty Free Port
LJIDZ	Liang Jiang International Development Zone
LJNA	Liang Jiang New Area
LJICZ	Liang Jiang International Center Zone
LZNA	Lanzhou New Area
MOC	Ministry of Communications
MOF	Ministry of Finance
NENP	National Expressway Network Plan
NDRC	National Development and Reform Commission
NNZ	New North Zone
NPL	Non-performing loans
PBOC	People's Bank of China

PNA	Pudong New Area
PRC	People's Republic of China
RCC	Rural Credit Cooperatives
RMB	Renminbi or *yuan*
SAIC	Shanghai Automobile Industry Corporation
SASAC	State-Owned Assets Supervision and Administration Commission
SCCC	Shaanxi Communications Construction Corporation
SEZ	Special economic zone
SJC	Shanghai Jiushi Corporation
SOE	State-owned enterprise
SSASAC	Shanghai State-Owned Assets Supervision and Administration Commission
SUCIC	Shanghai Urban Construction Investment Corporation
TUIDIC	Tianjin Urban Infrastructure Development and Investment Corporation
TVE	Township and village enterprise
USD	United States dollar
XXNA	Xixian New Area
ZNA	Zhoushan New Area

Glossary of Chinese terms

badatou 八大投 the big eight investment corporations

bangxiaoshi zhu cheng baxiaoshi Chongqing 半小时主城, 八小时重庆 half hour main city, eight hours Chongqing

baomao gaosu 包茂高速 G65 Inner Mongolia-Guangdong Expressway

beiyi nankuo xituo dongjin 北移 南扩 西拓 东进 move to the north, extend to the south, expand to the west and enter the east

chanye 产业 industry

chengyu gaosu 成渝高速 G93 Chongqing-Chengdu Expressway

Chongqing jingyan 重庆经验 Chongqing experience

Chongqing moshi 重庆模式 Chongqing model

Chongqing raocheng gaosu gonglu 重庆绕城高速公路 Chongqing ring road expressway

Chongqing shi chengshi zongti guihua 重庆市城市总体规划 Chongqing city urban master plan

Chongqing shi guoyou zichan jiandu guangli weiyuan 重庆市国有资产监督管理委员 Chongqing State Owned Assets Supervision and Administration Commission

cun dao 村道 village road

da chengshi liliang dai da nongcun qu 大城市的力量带大农村去 the big city that leads the big villages

daikuan xiulu shoufei huankuan 贷款修路, 收费还款 obtaining loans to develop roads and collecting fees to pay loans

danwei 单位 work unit

dao 道 road

dijishi 地级市 prefecture-level city

diya 抵押 mortgage

dou shi fa da jing ji quan 都市发达经济圈 metropolitan advanced economic sphere

duan 段 expressway segment

erji gonglu 二级公路 second grade highway

er huan 二环 second ring road

fusheng ji shi 副省级市 sub-provincial level cities

fuxian 复线 subsidiary line (expressway)

gaige kaifeng 改革开放 reform and opening

gaosu gonglu 高速公路 expressway

gaosu gonglu jingying gongsi 高速公路经营公司 expressway operator companies

gonglu 公路 highways

gongye yuanqu 工业园区 industrial park

gongye chanye yuan qu 工业产业园区 industrial production park

gudao yishi 孤岛意识 island consciousness

gufen youxian gongsi 股份有限公司 stock holding corporations

ji 级 grade (of road)

guojiaji jingji jishu kaifaqu 国家级经济技术开发区 national economic and technological development zone

guojia ji xinqu 国家级新区 national-level new area

guojia zhongxin chengshi 国家中心城市 national central cities

guojiaji pinkunxian 国家级贫困县 national-level impoverished counties

hou huayuan 后花园 backyard (in relation to the main urbanized area of Chongqing)

hurong gaosu 沪蓉高速 G42 Chengdu-Shanghai Expressway

huyu gaosu 沪渝高速 G50 Chongqing-Shanghai Expressway

jiating lianchan chengbao zeren zhi 家庭联产承包责任制 household responsibility system

jiedao 街道 street committee

jingji tebie qu 经济特别区 special economic zone

jijin yusuan shouru 基金预算收入 government-funded budget revenue

lanhai gaosu 兰海高速 G75 Gansu-Hainan Expressway

longtou zai Shanghai, longyi zai Chongqing 龙头在上海，龙尾在重庆 the head of the dragon in Shanghai, the tail of the dragon in Chongqing

mu gongsi 母公司 parent company

neihuan 内环 first ring road

nian fei piao 年费票 one year toll ticket

putong guo dao 普通国道 standard national road

qu 区 districts

renminbi 人民币 Chinese national currency

sanda huolu 三大火炉 three furnace cities

san huan shi she duo lian xian 三环十射多联线 three rings, eleven radiants, multiple lines policy

sanji gonglu 三级公路 third grade highway

sanlunche 三轮车 tuk-tuks

santian Chongqing 三天重庆 three days Chongqing

san xian 三线 Third Front

sanxia shuiku 三峡水库 Three Gorges Dam water reservoir

shan cheng 山城 city of mountains

shanshui zhi cheng 山水之城 city of mountains and rivers

sheng dao 省道 provincial road

shiye 事业 utility

shizhongshi 市中市 city in a city

siji gonglu 四级公路 fourth grade highway

siji gonglu 四级公路 fourth grade roads

si da yin 四大银 the big four banks

si xiaoshi Chongqing 四小时重庆'four hours' Chongqing

tou zi rong zi ji tuan 投资融资集团 local investment companies

Wanxian yimin kaifaqu 万县移民开发区 Wanxian migrant development zone

Wanzhou yimin kaifaqu 万州移民开发区 Wanzhou migrant development zone

xisanjiao 西三角 triangle of the west (Chongqing-Chengdu-Xian)

xian 县 counties

xiang 乡 township

xiang dao 乡道 township road

xian dao 县道 county road

xianjishi 县级市 county level cities

xibudakaifa 西部大开发 open up the West campaign

xijin jiqi 吸金机器 cash hoover

xingzhengqu jingji 行政区经济 administrative area economy

yiban yusuan shouru 一般预算收入 general budgetary revenue

yicheng yi jiao 一城一交 one city, one communication

yijiang liangyi sanyang 一江两翼三洋 one river, two wings and three oceans

yiquan liangyi 一圈两翼 one ring, two wings

yilu yi gongsi 一路一公司 one road, one company

yiji gonglu 一级公路 first grade highways

yi xiaoshi jingjiquan 一小时经济圈 one hour economic sphere

yukun gaosu 渝昆高速 G85 Chongqing-Kunming Expressway

yuxinou guoji tielu 渝新欧国际铁路 Yuxinou intercontinental railway

zhen 镇 town

zhi xia shi 直辖市 directly-administered city (province-level city)

zhiya 质押 pledge

zhong gong nong jian 中工农建 China, Industrial, Agricultural and Construction – the 'big four' state banks

zhucheng 主城 main city

zhuan kuan ji buzhu 专款及补助 transfers and subsidies

zhuhou jingji 主后经济 'duke economies'

Abstract

The development of large infrastructure projects at unprecedented speed and scope has dramatically changed the landscape of China. This spatial transformation has produced a contradictory political economy formed by sustained economic growth with increasing debt. Most research on the process of infrastructure development in China assumes that the state has retreated as market mechanisms increasingly determine production and consumption. However, during the economic reform era the Chinese state has strengthened its grip on the economy and accumulated enormous wealth through state-owned enterprises.

This study conceptualizes infrastructure development as a process of state-led wealth accumulation through territorial changes to the administrative units in relation to infrastructure development. The Chinese state has articulated this process for Chongqing—a province-level city with vast rural hinterlands in the interior of China—by establishing the Chongqing administrative division in 1997 and subsequently funding its infrastructure development especially through a network of expressways that connect all corners of China. By examining the process of production the Chongqing portion of the national expressways system, the analysis dissects how the state governs and materializes urban and regional infrastructure in contemporary China. Analysis of data from Chongqing city yearbooks of public finance, and corporate finance reports of the state-owned enterprises in charge of expressways development, demonstrate how the central government enables the process of capital accumulation.

Overall, this study contributes to advancing scholarship on the role of the state in relation to urban transformation in China and to theoretical discussions of critical political economy and urban geography. The arguments in this dissertation explain how state territorial governance produces not only urbanization, but sustains capital accumulation for state-owned enterprises in China. The dissertation refutes assumptions that market mechanisms are underpinning infrastructure development, and instead definitively explains how interrelated processes of state-led administrative restructuring and capital investment advance the urban process in China.

Introduction

Accelerated infrastructure development has dramatically changed the landscape of urban China. The People's Republic of China (PRC) has come to claim world leading infrastructure facilities: the world's largest network of expressways, the second largest railway network measured by length, the largest port in terms of containers moved annually, and the second and third largest airports in terms of passengers and cargo load per year (Xu 2012). The extent and speed of infrastructural development in China has been unprecedented on the world scale. More than 'pre-demand infrastructure', these projects arguably constitute the materialization of economic power of the Chinese Communist Party (CCP), through its government apparatus, in the PRC. Studying infrastructure as a process of production rather than as *a priori* element of the overall economic system constitutes a lens through which to understand strategies of state power in relation to urbanization in contemporary China.

Yet producing landscapes of concrete, pavement and steel in relatively short construction times yields a political economy of contradiction: sustained economic growth, even amidst regional or global recession, contrasts with failure of certain infrastructure projects to generate cash flow, such as toll roads and airports. Increasing debt registers in the portfolios of state-owned banks, while large-scale infrastructure projects form the bulk of state-owned developers' assets value. In spatial terms, these projects form uneven infrastructural landscapes across China that connect and dislocate flows of people and commodities.

Infrastructure development and state-owned enterprises

Development of infrastructure, as a dynamic of production, has increasingly become a main source of gross domestic product (GDP) growth in China. The provision of infrastructure in China has surpassed demand in many sectors, reducing the share of consumption in GDP formation in comparison with advanced capitalist economies. In 2011, consumption was just 35% of the GDP of China. On the other hand, the United States registered 71.6% of its GDP formed by consumption in 2011, and the United Kingdom and Canada had 64.3% and 57% respectively, of their GDP formed by consumption during the same year (The World Bank 2012).

State-owned banks and developers have increased their wealth since the early 1990s by funding and developing infrastructure. Seven state-owned banks are the main sources of capital in China, holding 67% of the total assets in the banking system (Azuma & Kurihara 2011; The World Bank 2012). On the other hand, local governments have created state-owned enterprises (SOEs) for developing infrastructure in their jurisdictions (Xu & Yeh 2005; Walter & Howie 2011). The largest infrastructure-developer SOEs in terms of assets value are under control of the governments of the four provincial-level cities: Chongqing, Beijing, Shanghai and Tianjin (Gao & Yan 2012). However, these four cities represent only 1.2% of the total land area of China and 6.3% of its total population.

Roads are the nerve system of transportation in China. In 2010, 93.7% of people and 75.5% of cargo vehicles moved across China by road (Xu 2012, p. 87). From 2000 to 2005, an average of 790 square meters of each square kilometer used for transportation infrastructure was for road development (Hu & Shi 2009). State-owned banks have granted increasing amounts of loans to SOEs for funding development of national-level transportation infrastructure, such as the National Expressway Network Plan (NENP). The Ministry of Communications (MOC) officially approved the development of the NENP in 2010, for a planned total of 84,900 kilometers of toll roads. The network consists of seven expressways that originate in Beijing and from different parts of China, nine that connect south and north, and 18 that connect east and west (Li 2013).

State-owned enterprises (SOEs) under control of local governments develop and operate roads, including segments of the national expressways. Thus their asset value is directly related to the grade (*ji* 级) and length of roads that they develop and operate. The SOEs that develop expressways require long periods to generate revenue to fulfill their liabilities; however, in the short term they collect high profits in form of toll fees from their projects (Green 2011). For example, Chongqing Expressway Development Corporation (CEDC) is a road developer under administration of the Chongqing city government. This corporation developed segments of six national expressways, which intersect in the urban core area of Chongqing, making it a unique space of China with more national expressways intersections than any other city.

Chongqing and infrastructure development

In contemporary China, Chongqing is a significant center of infrastructure-led urbanization. Chongqing is a historically important mercantile juncture where the Jiaqing River, a tributary to the Yangtzi, enters its main stream. In the twentieth century Chongqing was capital of China during the Sino-Japanese war (1937-1945). In 1997, the central government officially established Chongqing as a provincial-level city, by separating it from direct administration of Sichuan province. It is the newest of the four provincial-level cities under direct control of the central government and the only one that is located in the western region. It is also the largest in terms of land area, being 4.9 times larger than Beijing, 12.9 times larger than Shanghai and seven times larger than Tianjin.

Urban transformation in Chongqing differs from the experience of the coastal cities. The urbanization of the coastal region started during the first two decades of the economic reform era and depended on foreign investment (Lin & Lin 2011). By comparison, the urban transformation of Chongqing started approximately in late 1990s, having state-owned banks as the main sources of capital. Where in a context of capital scarcity land conversion and transfers to foreign investors characterized development in the coastal region, these conditions are not the main forces of urban and economic development in Chongqing.

The roots of the urbanization of Chongqing are bound up with the construction of the Three Gorges Dam in 1994. It initiated accelerated land conversion and infrastructure development, integrating the city into national and regional development policies, being the 'Open up the West' (西部大开发, *xibudakaifa*) the first of them in 2000. This campaign includes the development of various infrastructure projects seeking to increase economic growth in 12 provincial-level administrative units in the interior, including Chongqing (Goodman 2004). In the process, the central government channeled funds, through state-owned banks, for the development of transportation infrastructure and real-estate projects (Shih 2004).

Large amounts of investments for infrastructure development and manufacturing production have made Chongqing the city that has registered the fastest rate of economic growth at national level during the past five years (China Bureau of Statistics 2013). Restructuring of historic

manufacturing industries has constituted an important source of economic growth in Chongqing (CDEC & CCERI 2013). Since the Maoist era, Chongqing has been a center of vehicle production, and currently lodges the largest facilities for producing motorcycles and the third largest facilities for automobile production in China (Lammie 2009).

In the 2000s, the central government included Chongqing in two more policies: 'urban and rural integration' in 2007 and the first national level new area in western China, in 2011. In this context, discussions in media, journals and diverse national and international forums argued that Chongqing had unique characteristics of economic development, echoing a conceptualization of the city sponsored and patronized by the Party Secretary of Chongqing, Bo Xilai. In 2007 Bo, who was the former Minister of Commerce, argued that his policies promoted a different pattern of economic growth in China: accelerated and socially inclusive growth. He created the 'Five Chongqing' policy, and from there he framed the infrastructure projects of his administration, including public housing and 2,000 kilometers of roads for the city. Bo's political work also enhanced the presence of the CCP at the level of grass-roots in Chongqing by launching Maoist-style campaigns.

That was the genesis of the myth of the 'Chongqing Model' (重庆模式 *Chongqing moshi*). The discussion around the 'Chongqing Model' unfolded in two main parts. The first was infrastructure development by profitable LDCs as the way to achieve reduction of social disparities. The second one was the consolidation of the CCPs legitimacy through Maoist-style campaigns (cf. Bo & Chen 2009; Wong & Haug 2010; Frenkiel 2010; Fewsmith 2011;Yang et al. 2011; Huang 2011a; Sexton 2011; Huang 2011b; He 2011; Liu 2011; Luce 2011; Lim 2011; Pedroletti 2011; Mohan 2011; Stratfor 2012; Bell 2012; Belford 2012; Cartier & Tomba 2012). [1]

[1] Cui Zhiyuan, Professor at the School of Public Policy and Management in Qinghua University and advisor to the CSASAC, was the first to synthesize the economic and social transformation in Chongqing in 2008 using the term 'Chongqing Experience' (重庆经验 *Chongqing jingyan*). Cui published a brief commentary in '21st Century Economic Report' on 13 December 2008 (Cui 2008) discussing the crucial importance of financially strong SOEs to reduce the economic disparities between urban and rural populations in Chongqing. Wang Shaoguang coined the term 'Socialism 3.0' to define Chongqing's uniqueness as a third generation of socialist political economy in China, being the first one the Maoist era and the second one Deng's economic reform (Sexton 2011; Belford 2012). 'Chongqing Experience', 'Socialism 3.0' and 'Chongqing Model' discuss and analyse the same issues in the transformation of the political economy of Chongqing after Bo Xilai assumed his position as Party chief.

There were three main 'voices' in the discussion: Bo Xilai himself, national and international media and the academy.
Assessments of the 'Chongqing Model' in the national and international media highlighted that the main goal of Bo's administration was to improve the living standards of the population through providing public services, while at the same time maintaining accelerated economic growth. These assessments assert that Chongqing SOEs were a crucial factor in the reduction of disparities, but they failed in providing results to support this argument. Most of the discussion on this aspect of the 'Chongqing Model' referred to the construction of 20 million square meters of accessible housing for low-income urban residents and the granting of 'urban household registration' to two million rural residents.

In the academy, the discussion of the 'Chongqing Model' had two sides. On one side, there were promoters of the 'model' who repeated Bo's words, using public policy discourse (Huang 2011b; Szelenyi 2011; Yang et al. 2011; Cui 2008, 2010, 2011). On the other side there were scholars who critically assessed the economic development of Chongqing in the context of social inequalities caused by the integration of China to the world economy (Kenny 2012; Harvey, et al. 2012; Hui 2012; Zhao 2012). But promotion of the 'Chongqing Model' ended on 15 March 2012, when Bo was replaced by Zhang Dejiang as Party Secretary amidst scandals of corruption and elite factionalism within the CCP. Nevertheless, the next day, Huang Qifan, the mayor of Chongqing and vice-Party Secretary, announced the approval of a RMB 30 billion investment by an automobile corporation to build another factory in the city ('Program for Establishing Chang'an Auto City passed in Chongqing' 2012). After Bo's dismissal and political collapse, Chongqing was still maintaining its accelerated economic growth based on intensive capital investments.

The main objective of Bo Xilai was to repackage 'Chongqing' as a spatial economy without history. In other words, his goal was to make people forget or ignore the history of Chongqing, for which Maoist campaigns proved useful in the new discourse by confusing temporalities and directing the debate on Chongqing to the Cultural Revolution. In fact, this dissertation argues that transformation of the city has nothing to do with Bo's policies. For example, the main sources of capital that have fuelled infrastructure development in Chongqing have been the

central government SOEs and banks. Instead of a unique policy initiated by Bo, the strategy of economic growth through infrastructure development was a pioneering policy that the central government tested first in Shanghai in the early 1990s. The Shanghai government created the first infrastructure development SOE in 1992. Approximately 10 years later, the central government moved Huang Qifan from the Shanghai government to Chongqing to replicate the accelerated economic growth of the coastal city in the interior. A *protegé* and apprentice of technocrat leader Zhu Rongji during his administration in Shanghai, Huang arrived in Chongqing in 2001.When Bo started his administration in Chongqing; the task of Huang Qifan was already in motion. Aware of this, Bo promoted Huang Qifan as Mayor of Chongqing in 2009. After Bo's dismissal, the central government ratified Huang Qifan in his position. He announced the removal of Bo and the arrival of Zhang Dejiang as new Chongqing Party chief.

Conceptualization and approach

In this thesis I examine the economic development of Chongqing through infrastructure development in the context of national and regional policies. Working from the general to the particular, the first half of the disseration addresses infrastructure development in China. My general conceptualization seeks to analyze how land lease and capital investments converge to transform and realize urbanization through infrastructure development. The second half of the study focuses on development and operation of transportation infrastructure in Chongqing, through examination of the expressways or toll roads.

Research on transportation infrastructure regularly treats geographical conditions through location. However, location cannot contribute to explaining the spatial process of the development of transportation infrastructure by the state. To develop a spatial approach, I employ the spatial administrative hierarchy as an analytical framework to assess the way in which the CCP, through its state apparatus, exercises control over processes of production, including infrastructure development. For example, Cartier (2001, 2005) conceptualizes changes in the administrative territorial system as dynamic processes through which the state shapes administrative units as nodes of economic regulation and network of flows of capital. More than levels of scale, the spatial administrative hierarchy exists as a dynamic framework that shapes the territorial configuration of power relations between jurisdictions across five

levels: nation, province, prefecture, county and township. At the provincial level, there are provinces, autonomous regions and provincial-level cities. At the prefectural level there are prefectures and prefecture-level cities. At the county level there are counties, county-level cities and districts. Finally, at township level there are towns, townships and street committees. All these administrative units overlap and contain each other in form of nested hierarchies.

Chongqing is an administrative unit at the provincial-level that currently administers counties and districts within its jurisdiction. Adjustments in the configuration of the boundaries of administrative territories are directly related to the state regulation of economic dynamics (Gu & Pu 2008; Yu et al., 2011). Processes like land leasing, investment in infrastructure development or establishment of tax regimes in each administrative unit are related to its level and location in the territorial administrative system. The process of developing large-scale infrastructure projects also requires boundaries for circumscribing the relevant land area. The Three Gorges Dam is the outstanding example of a national infrastructure project developed in relation to a specific land area. The Three Gorges Dam Water Reservoir (三峡水库 *sanxia shuiku*), behind the dam, directly influenced the reterritorialization of Chongqing as a province-level administrative division. Relationships between administrative territorial change and state-directed economic development centrally contribute to defining urban transformations.

The state also employs regional strategies for territorializing economic processes, such as the 'Open up the West' campaign. Other, more discrete territorial strategies include the creation of the national level new areas (国家级新区 *guojia ji xinqu*). The central government of China created the first of these new areas in Shanghai: the Pudong New Area (PNA). These new areas are the territorial expression of central government policies for mobilizing investment and increasing economic growth in strategic areas for targeted industries. For example, PNA has been the incubator of the state-owned automobile industry (Thun 2006), which has been part of the national-level urban project of the central government.

Through spatial strategies, the state structures and configures power relations to achieve economic goals. Based on recognition of these conditions, I develop the argument that the Chinese government apparatus regionally recalibrates the spatial administrative hierarchy to

shape spatial transformations in relation to capital investment. In general, I argue that the Chinese government achieves accelerated infrastructure construction by rescaling power relations in the spatial administrative hierarchy, assessing for this purpose the way in which changes to the administrative divisions guide, control and reproduce economic processes that ultimately shape urbanization in Chongqing.

Content, organization and contribution of this study

The first half of the dissertation examines flows of capital investments in relation to land leasing as a general process that materializes in infrastructure development and ultimately shapes spatial transformation in China. The first chapter seeks to conceptualize the process of urban transformation through an interdisciplinary approach that combines a critical political economy with analysis of the production of space in urban and economic geography. I adjust and integrate this interdisciplinary approach for contemporary China by employing the spatial administrative hierarchy as analytical framework, including through introduction of a flow model summary. This approach ultimately proposes a new interpretation of the economic reforms for post-coastal development and urbanization in China.

The second and third chapters follow from the theoretical discussion to incorporate dynamics of money and infrastructure, two critical factors that contribute to explaining the time and scope of urban transformation. To understand the process of funding infrastructure development, I examine how the banking system concentrates the bulk of funding in the financial system of China. The second chapter concerns management of money through ways that the state-owned banking system governs the production and circulation of money as capital, conceptualizing it as the main institutional tool for accumulating wealth through funding infrastructure. How the financial-related ministries and the main state-owned banks coordinate monetary and fiscal policies to maintain funding to SOEs, which engage in accelerated infrastructure development, is key to understanding the process.

In the third chapter, I focus on the emergence and operation of SOEs dedicated to infrastructure development. These SOEs hold quasi-monopoly power over developing and operating infrastructure in China. To understand the ways in which banks and SOEs operationalize

infrastructure development, I develop insights about spatial processes in relation to power relations embedded in dynamics of the spatial administrative hierarchy. Sub-national governments at all levels of the spatial administrative hierarchy created state-owned infrastructure developers in the late 1990s. I assess the origins and operations of these corporations and then look at the development of expressways as national and sub-national transportation infrastructure projects. This chapter concludes with an analysis of the complementary dynamics of bank lending and expressway development through changes in the configuration of power relations between the administrative units, geared to state-owned wealth accumulation.

The second half of the dissertation turns to examine the development of expressways in Chongqing. Chapter four first introduces the historical background of Chongqing from the Maoist era to economic reform, and then focuses on explaining the accelerated process of land conversion and capital investment that began in Chongqing after the central government separated it from the control of Sichuan province. Its establishment as provincial-level city created a new institutional assemblage at a higher level of the spatial administrative hierarchy, which facilitates bank loans for its state-owned infrastructure development corporations. The second section of the chapter focuses on how the central government, the administrative units in Chongqing and the SOEs have structured the process of infrastructure development. The discussion argues that the overall economic process has accentuated the historic uneven spatial development of Chongqing.

The fifth chapter addresses funding and development of expressways in Chongqing through corporate governance and finance of the SOEs that develops expressways. After identifying changes in funding expressways and roads development in Chongqing thorough the reform era, the chapter presents a detailed assessment of the ways in which the expressway developer of Chongqing and the state-owned banks structure current funding and development of expressways. In the process, money is turned into a fixed asset, and the fixed asset is turned back into money. This logic underlies the creation of state-owned wealth through infrastructure development. The chapter concludes by examing spatial relations of the economic development of expressways with other infrastructure projects in Chongqing and adjacent administrative units.

The final chapter discusses the creation of Liang Jiang New Area (LJNA) as strategy of the central government to create a space of high economic growth in Chongqing. The economy of this national-level new area is an outcome of the inherited manufacturing base from the Maoist period and accelerated capital investments in infrastructure and land use conversion. The process of creating LJNA reterritorialized the governance of economic growth in three administrative units of the urban core area of Chongqing with different levels of development. The chapter concludes by conceptualizing LJNA as a space structured mainly by manufacturing, real-estate and finance, industries through which the central government accumulates wealth through taxation and its own SOEs.

Overall, this study contributes to advancing scholarship on urban China and to theoretical discussions of critical political economy and urban geography. From interdisciplinary perspective, the arguments contribute to enriching understandings of state power in relation to urban transformation in contemporary China. For China studies, this dissertation seeks to develop research on Chongqing, a city in the interior that has not yet being extensively researched in comparison with other provinces or regions in the coastal area. Overall, it provides an argument for refuting the widely reproduced economist perspective that the political economy of reform era China is shaped by market emerging mechanisms.

Part I

Fixed and Money Capital in China

Chapter 1

Reforms and capital: urbanization in contemporary China

The CCP, through its government apparatus, maintains a crucial role in defining and directing economic processes in contemporary China. In the reform era, it has strategically adjusted its monopoly of power inherited from Leninist state organization over the means of production to influence processes of economic development. This condition marks a substantial difference between the economy of contemporary China and advanced capitalist economies. In the Chinese economy, the state continues to be substantially involved in the organization of production, wealth creation and the appropriation of profits.

Understanding the continuity and transformation of inherited state ownership over the means of production establishes the basis for conceptualizing processes of capital creation and accumulation in China (Dirlik 2012; Peck & Zhang 2013). I address this theoretical challenge by adapting a critical political economy approach to urban geography and state theory in order to build a theoretical platform to conceptualize the economic processes, not just as production-consumption dynamics, but also as processes which reproduction depends on structures of power relations external to them. In this sense, I will argue that the central government makes changes to the territorial power relations of sub-national governments in order to reproduce the flows of capital that materialize in the production of space and constitute the urban process in China. A critical political economy approach also examines processes of capital creation and accumulation in relation to dispossession, unveiling the implications of power relations crucial in understanding the economy. This approach usefully assesses the continuing role of the CCP in the economy.

In the first section of this chapter I critically assess the existing scholarship on urban China in two conceptual trends: market mechanisms and the state. In the second section, I introduce conceptual considerations for understanding changes in the dynamics of capital creation and accumulation throughout reform era China. Then I assess the ways in which tax and banking reforms in the 1990s changed the processes of production and consumption in relation to transformation of space through infrastructure development. In the second section I present and

discuss a flow digram as framework for understanding the laws of motion of capital in relation to state power. Together, these sections dissect the process of capital accumulation and circulation that shape spatial transformations in contemporary China.

The state-market problematic

Different frameworks of assessment characterize the scholarship on accelerated urban transformation in China. Two main political economic tendencies prevail in the literature: the increasing importance of market mechanisms since the start of economic reform in 1978 (Nee & Matthews 1996; Shen 2002; Wu & Zhang 2007; Li & Li 2011; Lee 2007; Zhang 2006; Shen & Luo 2009; Zheng 2010; Wu & Zhang 2006; Zhu 1999; Ma 2006; Lin 1999; Zhu 2004; Wu & He 2007; Wu, Guo & Gu 2006; Wu & Zhang 2008; Chen 2011; Wu & He 2009; Wu 2007; Shen 2007; Xu, Yeh & Wu 2009), and the continuing strategic control of the state over productive resources (Xu & Yeh 2008; Xu 2008; Lin & Ho 2005; Lin 2009; Huang 2008; Zhang 2002; Lin & Ho 2005; Lin 2009; Xu, Yeh & Wu 2009; Zhao & Zhang 1999; Xu, Yeh & Wu 2009; Abramson 2007; Hou & Leaf 2006; Yang 2006; Wu 1999, 2010; Hsing 2010; Chung 2007; Haila 2007; Chan 2010; Cartier 2001, 2009). Figure 1.1 presents the two main political-economic tendencies in the scholarship for assessing urban transformation in reform era China.

Figure 1.1. The state-market problematic in the scholarship

Local context	Market	State
Pearl River Delta (Southern China)	Shen (2002), Wu and Zhang (2007) , Li and Li (2011), Lee (2007)	Xu and Yeh (2008), Xu (2008)
Yangtzi River Delta (The Coastal Region)	Zhang (2006) , Shen and Luo (2009), Zheng (2010), Wu and Zhang (2006), Zhu (1999)	Lin and Ho (2005), Lin (2009) Huang (2008)
National or other regions	Nee (1996), Nee and Matthews (1996), Ma (2006), Lin (1999), Zhu (2004), Wu and He (2007), Wu, Guo and Gu (2006), Wu and Zhang (2008), Chen (2011), Wu and He (2009), Wu (2007), Shen (2007), Xu, Yeh and Wu (2009)	Zhang (2002), Lin and Ho (2005), Lin (2009), Xu, Yeh and Wu (2009), Zhao and Zhang (1999), Xu, Yeh and Wu, (2009) , Abramson (2007), Hou and Leaf (2006), Yang (2006), Szelenyi (2008), Wu (1999, 2010), Hsing (2010), Chung (2007), Haila (2007), Chan (2010), Cartier (2001, 2009).

The bulk of the scholarship assesses urban transformation in China from the perspective of the increasing importance of market mechanisms and the diminishing role of the state in the economy. According to research that assesses urbanization from this perspective, the growing exchange of commodities through emerging market mechanisms, decentralization of the fiscal regime and vast flows of foreign investments are shaping a transitory path towards a market economy. Ma's characterization exemplifies this approach:

> Post-1978 reforms have fundamentally transformed the nature of the Chinese city as a consequence of the convergence of a multitude of economic, political, and social processes of different scales in the cities. These processes include the globalization of production, marketization, and commodification … decentralization of political and fiscal powers from the central state to the city and its districts, privatization of ownerships of firms and the means of production, and the relaxation of rural-urban migration' (Ma 2006, p.36).

One subset of these studies employs 'urban entrepreneurial governance' as an analytical framework to assess transformations in reform era urban China (Shen 2002; Zhang 2006; Shen & Luo 2009), treating cities as already existing containers of capital creation and accumulation.

Their growth is generated through cooperation-competition interactions articulated in institutional mechanisms. A second subset features entrepreneurial dynamics in Chinese cities. Urban entrepreneurial governance is an analytical framework coined by Harvey (1989) as a broad coalition of forces which the government facilitates and coordinates in cities to attract mobile capital, flexible production and consumption to urban spaces. Inter-city competition for capital through entrepreneurialism guarantees the reproduction of capitalist social relations of labor exploitation on wider scales and deeper levels. Using Baltimore as a case study, Harvey (1989) defines 'public-private partnership' as the centerpiece of urban entrepreneurialism.

Research in this stream examines private investment as strategy for capital accumulation in relation to urban planning (Wu & Zhang 2007); the retreat of the state in relation to private capital in public services provision, coupled with financial deregulation (Wu 1997; Wu & He 2009); and public-private partnership for industrial development (Zheng 2010). Methodologically, this research extrapolates the urban entrepreneurial governance framework, derived from advanced capitalist economies, to apply it directly to the context of contemporary China without assessing its comparative relevance. This underlying problematic characterizes other approaches to research on China's urban transformation.

The urban growth machine, which also favors a market approach, appears frequently in scholarship on urban China (Li & Li 2011; Zhu 1999; Lee 2007; Wu & Zhang 2006). This work identifies mutually reinforcing interests in economic growth between government and private firms as the main logic that drives urban development. The urban growth machine is a structural conceptualization of the urban economy and politics based on private property development through commoditization of space in United States (Rodgers 2009). The main limitation of the urban growth coalition approach to China is that it is incapable of incorporating the cadre-promotion logic of the CCP (Zhang 2002; Ma 2006), in which power relations differ substantially from political contexts of advanced capitalist economies.

The literature that approaches urbanization as the outcome of emerging market mechanisms recognizes the importance of the state as the main agent of spatial transformation, either through urban planning or the control of land resources of the sub-national governments (Xu 2008; Shen 2007; Xu & Yeh 2008) or as both player and regulatory agent of investment and land leasing (Zhao & Zhang 1999; Xu, Yeh & Wu 2009). However, these studies treat the role of the state as

a transitory path towards a market economic formation. Szelenyi (2008) is another example of this approach. Though his discussion is not about urbanization, he conceptualizes the political economy of reform era China as a transitory path towards marketization paved by strong centralized state power.

Research on land commodification especially synthesizes the market transition assumption employed in most of urban China literature. The conceptualization of a 'black box' in land transactions, for example, by Lin and Ho (2005) and Lin (2009) unrealistically brackets the state in favor of the market. In these studies, the authors discuss the relevance of sub-national governments in shaping land commoditization; however, they 'pack' the state institutions as if they were homogeneous throughout time, overlooking their inherent variability in relation to national and regional economic goals.

But urban transformations through accelerated large-scale infrastructure development have not only maintained the Chinese state apparatus as the crucial agent in the processes that shape cities, they have also reinforced the state's economic and political power. This reality fundamentally questions the prevailing view of the scholarship about the state apparatus and the capacity of private agents to transform Chinese cities. In other words, the crucial problem with the economic determinism of most of the studies on urban China is their conceptualization of the reforms of 1978s, as Cartier (2009) argues:

> Normative analyses of China under reform in the geographical literature assume that China is experiencing transition to a market economy and therefore seek evidence of state retreat and market advance. In reality, the PRC state apparatus is enlarging in some sectors and retains power over critical aspects of reform transformation, including production and consumption (Cartier 2009, p. 372).

Contrary to the idea of the market transition, i.e. government intervention receding in favor of or paving the way to the market; the CCP, through its state apparatus, has maintained a kind of resilient authority since the start of the reform era. The CCP as the party-state has maintained and exercised political and economic control by achieving dynamic stability through adaptation (Shambaugh 2008). In sum, 'the CCP's blend of modernist adaptability and Leninist ideological and organizational principles is one of the main *causes* of twenty-five years of economic growth and social stability' (Pieke 2009, p. 6).

The multiple institutions of the Chinese state apparatus have reinforced control over land and capital, and therefore its capacities for transforming cities (Chan 2010; Cartier 2001; Hsing 2010; Lin 2011; Lin & Yi 2011). In the process, urban planning is not only a strategy to govern domestic and foreign private enterprises in cities but also and more so it is a tool of material and symbolical domination by the state (Abramson 2007) as well as a strategy to realize economic plans and agendas of politicians at the sub-national level (Hou & Leaf 2006; Xu 2008). Infrastructure development represents the economic extension of the state through increasing the number of sources from which it can obtain tax revenues (Wu 1999; Chung 2007; Xu & Yeh 2005).

Two converging sources of capital that propel spatial transformation exemplify state power over the dynamics of production and consumption: land and the land use regime, and money capital through the financial system. Scholarship on land commoditization through the land use regime assesses dynamics within changing institutional configurations of the state apparatus (Cartier 2001, 2002; Lin & Ho 2005; Xu, Yeh & Wu 2009; Lin 2009; Hsing 2010; Chan 2010). Recent studies on the financial system discuss the way in which reforms in the banking system have provided preferential loans to local SOEs in charge of infrastructure development since the mid 1990s (Shih 2004, 2008; Huang 2008; Walter & Howie 2011). These two lines of inquiry – strategic control over land use and the financial system – guide my analysis of processes through which SOEs coordinate and complement land lease arrangements and development of infrastructure.

In the next section I propose a conceptual framework for understanding processes of capital formation and accumulation in urbanization in reform-era China, in which state power in relation to the land use regime and allocation of money capital is pivotal. I subsequently employ this conceptual apparatus to reinterpret ways in which the state has adjusted its strategies for governing economic processes throughout the reform era.

The process of capital creation and accumulation in reform era China

Economic reform in China has gradually dismantled party-state control over production (monopoly) and consumption (monopsony), initially by flexibilizing the quotes of commodity

production, allowing price fluctuations. However; multiple institutions of the CCP's state apparatus have continued to influence economic processes. Consequently, the economy that has emerged in the reform era has unfolded differently from advanced capitalist economies. During the Maoist period, the party-state determined the production and reproduction of processes of capital formation (Lippit 2005; Dunn 2007; So 2008). Yet this political economic relation lies inherited, latent and sometimes unpredictably realized, at the core of all economic transformations during the reform and opening era (改革开放 *gaige kaifeng*). There are two basic principles that the post-reform CCP has maintained and reinforced: its own ruling power and substantial state ownership of the means of production (Chen 1995). In the context of reform and opening, processes of capital formation have remained directly or indirectly in the control of the CCP and its governmental institutions (Cartier 2011b; Chan 2010; Szeleny 2010 cited in Peck & Zhang 2013).

The state reproduces production, exchange and consumption of commodities, ultimately enabling the expansion of the economy (Jessop & Sum 2006) through articulating strategies from its multiple and contradictory sets of institutional arrangements (Jessop 1999, 2000, 2002, 2004, 2008, 2014). In the context of reform-era China, sub-national governments design different legal frameworks to institutionalize and regulate land transactions and ownership (Cartier 2001, 2002; Hsing 2010). In parallel, the state-owned banks and monetary authorities from the central government combine strategies to regulate interest rates and allocate capital to SOEs (Walter & Howie 2011; Shih 2008; Ong 2011) to build the infrastructure.

Infrastructure comprises roads, channels, ports, docks, airports, power stations, water supply systems, and the like. The development of infrastructure is also an economic activity of production that requires constant capital (instruments of labor, raw materials, and so on) and variable capital (labor power). Thus, I will conceptualize development of infrastructure projects as commodity production (Harvey 1982). Labor power is the only part in commodity production that creates more value than it actually contains. This additional value is 'surplus value' that producers appropriate from consumption and realize it into new investments for reproducing the production process (Harvey 1982). For example, the monetary representation of 'surplus value' generated through consumption of an expressway is toll fees that are appropriated by developers for funding development of new expressways.

Conceptualizing infrastructure development as commodity production for this study will allow me to conceive two main moments of state power in reproducing expressways production as changing and complementary forms of capital that circulate as both commodities and money.[2] These two main moments are the structuring of land use regimes and strategies of money commoditization. Hence, expressways are 'fixed capital' when they are commodities that users can consume through paying toll fees and at the same time they constitute 'money capital' when the SOEs in charge of their development employ them as collaterals for leveraging more funding. Wu (1997) proposes an assessment on infrastructure development in this sense; however the methodology of this study overlooks the importance of state power in reproducing this process in reform era China.

The CCP has expanded and regulated economic processes by adjusting the territorial configuration of its multiple governmental institutional arrangements through changes in the system of administrative divisions. This system organizes territorial jurisdictions in four main levels below the central government. These are, in descending order according to power relations: province, prefecture, county and township-town[3]. The State Council, the cabinet of the central government that encompass all sectorial ministries, through the Ministry of Civil Affairs, formally approves changes the administrative territorial system.

> The state maintains the power to change boundaries of any subnational territory, and to change the rank or governing level of any territory, including all types of cities. China does not have a federal system that guarantees constitutional integrity of subnational territories, and only the central government decides and confirms territorial changes: the state can grant, change, or remove any territorial status … The Chinese Ministry of Civil Affairs is the division of government that approves boundary changes in China's dynamic landscape of territorial administration (Cartier 2013, p. 68)

The central government can approve changes in the territorial system of China, for example by adjusting the boundaries of the territorial units or by merging units (Jae & Tao 2004). Cartier (2001, 2005) has conceptualized the study of these changes in the administrative territorial system as the process of scale relations and rescaling. In political economic terms, these dynamic changes in territorial power relations shape administrative units as nodes of economic regulation

[2] The essential formula of capital circulation and surplus value production is: $M – C – [M + \Delta M]$ - … (Harvey 1982). In this formula M stands for money capital, C for commodity capital and ΔM for surplus value.
[3] Refer to Ma (2005) or Mahadevia (2007) for a detailed diagram of the administrative territorial system of China.

and networks of flows (Swyngedouw & Heynen 2003; Peck 2002). Therefore, the central government influences the spatio-temporal arrangements in processes of capital creation and accumulation in each jurisdiction in China through adjustments in the administrative boundaries (Cartier 2005). The conceptualization of changes in the territorial system as scalar formations focuses on processes (Cartier 2011; MacKinnon 2010), in contrast with previous studies (Xu & Yeh 2013) that consider the spatial administrative hierarchy as *a priori,* and consequently fixed, territorialized institutional platform for assessing changes in the economy, including infrastructure development. Another example is Zhang and Wu (2006), whose study assess changes in the spatial administrative hierarchy in relation to gradual generalization of market mechanisms. Though this study focuses on assessing variations in the territorial configuration of governments at sub-national level, it assumes economic processes as moving towards marketization, as in any other capitalist context. Both studies then have methodological weaknesses in terms of the state-market problematic, as discussed above.

Changes in the territorial administrative system are multidimensional and dynamic processes. Different levels of administration in the hierarchy can contain lower-ranked units, forming multiple nested hierarchies that shape the volume of power relations of each administrative unit. Since capital formation, including infrastructure development, it is a complex process that the central government shapes, structures and adjusts between multiple bureaucracies, it is important to consider characteristics of each jurisdiction. Territorial adjustments shape process of capital formation and accumulation in substantially different ways, depending on the kind of administrative unit and its level in the spatial administrative hierarchy.Administrative units' financial and budgetary capacities vary according to their level in the hierarchy. The higher they are, the greater their capacity to manage resources (Cartier 2013).

A city in China is fundamentally an administrative territory which budgetary and administrative capacities depend on its level in the territorial system (Mahadevia 2007; Cartier 2013). Cities can also be at vice-levels, such as those at the sub-provincial level (副省级市 *fusheng ji shi*).[4] Thus, conceptualization and empirical assessment of cities in China constitute the state-market problematic (Cartier 2015). In the history of urbanization under capitalism, cities are nodes of

[4] There are 15 sub-provincial level cities in China. Just two of them are in western China: Xi'an, capital of Shaanxi province, and Chengdu, capital of Sichuan province.

capital organization and accumulation, however in China cities are administrative units at provincial, prefectural or county level.

Cities at the provincial level (直辖市 *zhi xia shi*) are under direct the direct control of the central government. There are four: Beijing, Tianjin, Shanghai and Chongqing. These are key in central government policies, and therefore constitute important sites in the national space economy through which the party-state mobilizes capital to increase accumulation (Leng 2010). Provincial-level cities can have districts and counties under their jurisdiction. At the next level, prefecture level cities (地级市 *dijishi*) can administer districts, counties and even county-level cities (县级市 *xianjishi*) (Ma 2005). In contrast, county-level cities cannot have districts or counties under their jurisdiction (Jae & Tao 2004), being a single solid administrative unit. Under reform, the provincial level cities have experienced considerable change in their administrative-territorial configurations, especially the reterritorialization of counties into county-level cities or districts. The territorial power relations of counties (县 *xian*) and districts (区 *qu*) are decisive in shaping processes of capital accumulation.

Both county-level cities and districts are administrative units at the county level, yet there are fundamental differences between them in management and funding capabilities. County-level cities have more capacity to manage their own economies in terms of infrastructure development and tax revenues. On the other hand, districts are administrative extensions of the cities that circumscribe them. Each represents different spatial frameworks structuring relations between networks of capital flows and economic regulation. District governments have less capacity to plan land commodification and manage their taxation regimes (Jae & Tao 2004, 2010), and their policy making depend on the prefecture-level cities or provincial-level cities within which boundaries they are located (Jae & Tao 2004, 2010). Thus, when the State Council approves the territorial expansion of districts, it is implicitly fostering the expansion of the economic capacities of prefectural or provincial-level cities. Throghouth the reform era the state apparatus has adjusted configuration of the spatial administrative hierarchy in relation to land and money commoditization for materializing different spatio-temporal arrangements of infrastructure development.

Changes in the territorial configuration of cities at different levels of the administrative hierarchy are directly related to the reproduction and acceleration of infrastructure development, ultimately shaping the process of urban transformation in China. Cartier (2015) develops the term 'territorial urbanization' to synthesize the process as follows: '(…) territorial urbanization as the process through which the Chinese Communist Party (CCP) and the Chinese government – the party-state – governs the administrative divisions to establish, expand and develop cities' (Cartier 2015, p. 296). The following subsections discuss two periods in which the central government structured two trends in adjusting territorial power relations.

Political contradictions in capital accumulation (1978-1992)

At the beginning of the reform era, flexible production in rural areas through the household responsibility system (家庭联产承包责任制 *jiating lianchan chengbao zeren zhi*) accelerated production and aggregated consumption (Shi 1990). The main engine of capital formation was rural private township and village enterprises (TVEs) in coastal provinces: Jiangsu, Zhejiang and Shandong (Oi 1995; Ong 2011; Huang 2008). TVEs became the main economic engines of growth by breaking the state monopoly over production from the Maoist era and eroding its monopsony.

The socioeconomic phenomenon of TVEs has been extensively researched, and most of the scholarship considers them as SOEs at county or township levels (eg. Naughton 1994; Oi 1995; Lin 1995; Rozelle & Li 2003; Bramall 2009). The milestone work of Huang (2008) demonstrated that TVEs were private corporations since the beginning of reform era, which inverts the understanding of processes of surplus value appropriation and capital accumulation in reform era China. According to Huang's findings, private capitalists were at the core of surplus value creation, as in any capitalist economy.[5]

TVEs started to accumulate capital and had to find new spaces to circulate it for creating further opportunities of profits, triggering competition among producers. In other words, the law of 'coercive competition' (Harvey 1981) started to determne how producers sought to allocate

[5] This breakthrough research has provoked critique and debate. Andreas (2010) has criticized Huang for overlooking the factor of state-owned TVEs as decisive in capital accumulation in favor of private capitalists.

capital to reduce production times to increase circulation, shaping allocation of surpluses throughout the 1980s. During 1980s and the first half of 1990s, the private TVEs obtained financial capital from Rural Credit Cooperatives (Ong 2011) to finance investments in fixed capital enclosed in the production process (i.e. machines, tools of work, equipment and so on).

The parallel and complementary process of economic regulation through adjustments to the territorial administrative hierarchy throughout the 1980s had as main feature the establishment of county-level cities. The way in which the State Council approved the creation of most of these administrative units was by transforming counties into cities (Jae & Tao 2004). In 1978 there were 92 county-level cities; by 1992 there were 323. From 1986 to 1992, the central government approved the creation of 139 county-level cities. In the context of growing capital accumulation in rural areas, governments of county-level cities, with more capacity than counties to institute fiscal measures, started to increase taxation to productive activities of TVEs (Jae & Tao 2004).

A first systemic crisis in capital accumulation can occur when there is more capital derived from dynamics of production and consumption than there are possibilities to allocate it for further production. This triggers overaccumulation and depreciates the value of capital (Harvey 1981). TVEs invested their surpluses in acquiring machinery and other tools to accelerate production, avoiding any crisis of overaccumulation. In this sense, TVEs invested the capital they obtained from consumption in fixed capital enclosed in production processes, such as industrial equipment. This reproduced the production-consumption dynamics and circulation of capital. The space in which the newly created excess capital derieved from this new wave of reinvestments circulates is important in assessing the creation of further possibilities for expanding the production process. Thus, space for circulation of capital is directly related to both the latent possibility of a systemic crisis and the possibility of a new round of production expansion. At this juncture, configuration of territorial power relations shaped capital circulation in fragmented economies, the spatial outcome of which were dislocated small infrastructural landscapes.

The relation between localities, mostly county-level cities, with increasing taxation prerogatives, and gradual diminishing of the central government's economic regulatory capabilities, produced a multiplicity of dislocated uneven spatial economies (Baum 1992; Oi 1995; Wedeman 2003;

Misra 2003). Sub-national-level governments engaged in protectionism to secure sources of taxation, shaping the spatial economy of 'duke economies' (主后经济 *zhuhou jingji*) (Feng 1997). The central government further spatially biased capital circulation by maintaining discriminatory price controls against commodities for consumption, which accentuated existing unevenness and fuelled protectionism, giving governments in some localities incentives to set up numerous toll fees or block roads to stop circulation of commodities (Shi 1990; Wedeman 2003).

In terms of commoditization of money capital, some local governments went further to secure their revenues by issuing their own currency, for use only within certain jurisdictions to purchase products and services (Bauman 1992). Provincial governments employed direct control over financial institutions in their jurisdictions to manage money commoditization for their own benefit (Shih 2008). Local authorities gradually circumscribed capital accumulation and circulation in dispersed spatio-temporal fixes (Feng 1997); limiting possibilities to allocate capital for further accumulation. The banks started to accumulate rising debts which ultimately caused a sharp depreciation of money capital in form of inflation at the end of 1980s (Shih 2008). In 1988, real GDP growth reached only 4.7%, its lowest point since 1978. In the same year, inflation rose to 11.3%, its highest in the reform era (China Bureau of Statistics 2009).

Thus the crisis in capital accumulation in the late 1980s was an economic synthesis of the political contradictions over capital circulation, and the commodification of money capital between the central government and local governments. In the early 1990s the central government discussed reforms to avoid other economic crisis (Zhao 1993; Shih 2008). These reforms had two main objectives. The first was to reinforce the regulation capabilities of the central government over the economy, dissolving local protectionism and avoiding potential threats of political fragmentation. The second was to recover accelerated economic growth while avoiding any other economic crisis (Petracca & Xiong 1990; Baum 1992; Shambaugh 2008). The central government instrumentalized these two principles through reforms in the tax system, financial system and management of SOEs.

Deng Xiaoping's Southern Tour in 1992 was the milestone at which point the central leadership started to structure reforms in direct relation to processes of capital accumulation. During the tour through the special economic zones (经济特别区 *jingji tebie qu* SEZs), Deng referred to the

development of a building as example of 'practical things' that should lead development orientation of the Chinese economy in the coming years (Zhao 1993, p. 746).

Reforms in capital accumulation: accelerated infrastructure development (1992-present)

In the early 1990s there were two converging processes of restructuring SOEs at subnational levels. The first one occued from 1982 to 1994, when governments below the national level privatized approximately RMB 500 billion of state-owned assets (Montinola et al. 1995, p. 76; Misra 2003).[6] The second process started in 1994, as a consequence of the national fiscal reform in that year. These two processes, combined with the reform in the banking system in 1997 reshaped spatio-temporal dimensions of capital creation and accumulation in contemporary China.

After Deng's Southern Tour, the central government reformed the fiscal system to consolidate its grip on the economy through the 1994 reform to the tax system. This reform increased the share of tax revenue in favor of the central government, but still left public services and infrastructure provision as responsibilities of sub-national level governments (Zhang 1999). Constrained by lack of funds and still having to develop infrastructure in their jurisdictions, governments at all levels of the administrative hierarchy started to separate funding and infrastructure development from their related bureaus. Instead, they created SOEs to attract capital from banks and other investors. These SOEs had flexible corporate structures and received subsidies from the governments at the jurisdictions in which they operated (Wu 1999; The World Bank 2007; Wang & Zhang 2008, 2009; Wu 2010; Lin 2011). The main economic activity of these SOEs is land development, though they also produce commodities, perform banking functions and commoditize and speculate with land. These SOEs have diversified corporate structures to manage their assets, such as equity investments, joint-ventures with foreign or domestic private firms, subsidiary companies, share holding schemes, off-shoring, and the like (The World Bank 2007; Azuma & Kurihara 2011; Shih 2011; Walter & Howie 2011; Cui 2011; Huang 2011; Tsui 2011).

[6] RMB is the short form of the Chinese currency 人民币 (*renminbi*). RMB 1 = approximately USD 0.16.

Walter and Fraser (2011) use the term 'locally incorporated investment companies' to define the SOEs that sub-national governments created after the 1994 tax reform. Azuma and Kurihara (2011) use the Chinese term 投资融资集团 (*tou zi rong zi ji tuan*) and they translate it as 'local investment companies'. Similarly, Stevenson-Yang (2013) uses the term 'local governments financing platform'. De, Li, Zhao and Zhao (2011) use the term 'urban investment and trust corporations'. While these terms place emphasis on their funding structure, I will denominate these SOEs as land a development corporation (LDCs), which captures and emphasizes their main economic activity: capital formation and accumulation through land development. These LDCs frequently establish multiple subsidiaries for diversifying the management structure of their projects. Local governments have created other SOEs that exclusively perform banking functions. I call these SOEs financial complementary corporations (FCCs). The corporate structure of these institutions is normally in form of bank, though there can also be trust funds, asset management companies or the like.

The creation and later restructuring of LDCs after the 1994 fiscal recentralization synthesizes two fundamental principles of the reform era state-owned corporate reforms: enterprise autonomy and ideological commitment to state ownership (Nolan & Zhang 2002). Sub-national governments created and capitalized these corporations in the context of reduced fiscal revenues and increasing infrastructure demand, rather than attracting domestic or even foreign private corporations. In the emerging urban economies of province-level cities of mid 1990s (or municipalities), large SOEs were strategic economic pillars in two fundamental aspects: as generators of revenue for the city governments and as agents of accelerated spatial transformation (Nolan & Wang 1999).

The LDCs and FCCs structure intricate processes of land commoditization and credit for developing infrastructure. The LDC can receive a plot of land from the infrastructure-related bureaus at sub-national level, such as the bureau of communications or of construction. Then FCCs provide a loan to LDC for developing an infrastructural project. Moreover, FCCs are also eligible to receive subsidies and tax exemptions from sub-national governments and in this are crucial for managing debt and delaying any credit default which LDCs might incur. However, the largest source of money capital for funding infrastructure development is the banking system.

The LDCs and state banks: capital accumulation in relation to spatial transformation

The central government implemented substantial reforms in bank credit allocation and debt management in the late 1990s, changing the structure and corporate governance of its banking system. In 1993 and 1994, the People's Bank of China (PBOC), the central bank, started to operate a gradual financial asphyxiation of the financial institutions in rural areas, particularly rural credit cooperatives, eventually abolishing them and appropriating their capital reserves (Huang 2008, 2010).

Next in banking system reform, state-owned banks' corporate governance was centralized. Right after the Asian Financial Crisis in 1997, the State Council removed the control of local branches of the main four state-owned banks and the PBOC from sub-national governments, particularly at the provincial level. The main four banks are Agricultural Bank of China (ABC), Bank of China (BOC), Industrial and Commercial Bank of China (ICBC) and China Construction Bank (CCOB). The State Council assumed direct control over their decision-making processes for capital allocation and debt management. These two reforms put under direct central government control the commodification of money and a vast amount of capital produced by TVEs during throughout the 1980s (Shih 2007; Heilmann 2005; Han 2012; Ong 2011).

By late 1990s, the central government had appropriated surpluses from the TVEs, which were stored in the banking system, and assumed control over lending. It now decided the time-frames and recipients of infrastructure development funding. State-owned banks immediately started to provide loans to LDCs, and gradually came to represent the main source of funding for these SOEs (Suzuki et al. 2008; Ong 2011).

After reforming the banking system, the central government appropriated vast amounts of liquid capital stored in banks under the control of sub-national governments and also seized control over credit allocation in favor of LDCs: 'What moves this structure [Chinese credit system] is not a market economy and its laws of supply and demand, but a carefully balanced social mechanism built around the particular interests of the… political elite…. It is the Party, and not the market, that runs China and its capital-allocation process' (Walter & Howie 2011, p. 21). The state-owned banks have been the main source of funding to LDCs of city governments. In the first quarter of 1997, the state owned banks lent RMB 4.6 trillion (67% of GDP) to LDCs under

the control of city governments (Shih 2008, p. 177). This amount increased to RMB 9 trillion at the end of 2003 (77% of GDP) (Shih 2008, p. 177).

The sub-national governments engaged in accelerated land commodification to carve out spaces for obtaining loans through LDCs to develop infrastructural projects in their jurisdictions, as well as for obtaining revenues from land leasing. The central government had allowed land commodification in Shenzhen since 1987 but it accelerated just after Deng's Southern Tour and the subsequent reforms in the banking system (Cartier 2001). Processes of land commodification are contested and conflictive interactions between village committees and the sub-national governmental apparatuses (Cartier 2001; Lin & Ho 2005; Lin 2009). These processes are actually transactions of land use rights, which mean that land markets and private land ownership in China are absent (Haila 2007). The government is ultimately the land owner; when it leases land use it collects rent, which then can transfer to LDCs as subsidies (Huang 2014).

Throughout the 1990s the State Council approved changes in territorial power relations of cities at the three administrative levels. These adjustments strategically reproduced and regulated the relation between processes of land and money commodification that emerged after the tax and banking reforms. The State Council reduced the role of county-level cities as scales of production and economic regulation and increased the importance of prefecture and provincial-level cities (Jae & Tao 2004). From 1994 to 1995, the State Council approved the creation of just 13 new county-level cities (Cartier 2011a, p. 24). In 1996, there were 445 county-level cities, and from that year the State Council started to approve the gradual reduction in number of that administrative unit, in 2010 there were 370 (Cartier 2011a, p. 24-25). Regarding counties, in 1978 there were 2009, and by 2008 there were 1,464 (Cartier 2011a, p. 24-25). At the same time, the number of districts abruptly increased. In 1999, there were 87 districts, but by 2006 the State Council had approved the creation of 856 (Cartier 2011a, p.24). Through these adjustments, the central government expanded the governing powers of city governments over resources. The reduction of county-level cities in relation to increasing districts centralized control over land and money commodification, widening the possibilities of capital circulation. This institutional assemblage was the antithesis of the one prevailing in the period from 1978 to 1992, when counties were the main spaces for capital formation.

In 1997, right at the beginning of the banking reform, the State Council approved the creation of the fourth provincial-level city of China: Chongqing. The structure of this rescaling merged two prefecture-level cities and one prefecture into Chongqing prefecture-level city; which at that time was under jurisdiction of Sichuan province. The creation of Chongqing by rescaling territorial power relations of these four administrative units created an unprecedentedly large administrative area for capital circulation and expanded opportunities for capital allocation to reproduce processes of production. An example of this is the larger resources to which the LDCs of the city have access. The increasing transfer of money capital from the centralized banking system has been providing LDCs more resources for embarking in large projects, and in Chongqing the LDCs now have more money capital and control over larger land area.

Since the early 1990s, the state-owned banks have transferred funding to LDCs for developing large-scale national-level projects. These projects work as a physical framework for production that shapes the circulation of capital of other economic activities. In other words, the infrastructural projects are the spatial framework through which other agents of production create and circulate capital. These larger projects form a national spatial economy, which did not exist in the first two decades of the reform era. Examples of these projects are the expressways of the NENP, railways or even one-piece colossus projects developed by single LDCs, such as the Three Gorges Dam or international airports. LDCs are also engaged in developing all kinds of infrastructural elements: shopping malls, parks, bridges, water supply systems, sewerage, and so on.

The Party-state, through its multiple government institutions, has been the main producer of infrastructure by controlling in its favor processes of land and money commodification (Huang 2008). The changes implemented in the first decade of economic reform to solve political contradictions in capital accumulation reshaped the economy and ultimately materialized in the development of the physical landscape. This process is substantially different in capitalist economies, where private capitalists maintain control over production-consumption dynamics as well as over investments that materialize infrastructure development, as strategy to circumvent crises of overaccumulation of capital (Harvey 1981).

The development of infrastructure requires leveraging enormous amounts of money capital that could otherwise circulate in producing more surplus value in shorter time frames. The relation

between the financial institutions and the state apparatus performs money commoditization by issuing bonds, derivatives and other financial instruments to bridge circulation of money from production-consumption processes to development of infrastructure (Harvey 1981, 2010). In the context of reform-era China, the state apparatus does not just mediate this process but actually performs it through state-owned banks and LDCs.

Infrastructure projects, as commodities in circulation, work as frameworks for production (fixed capital) and consumption (consumption fund) (Harvey 1982). For example, an expressway functions as fixed capital when it connects places of production or enables workers to reach the workplace, and it functions as part of the consumption fund when buyers transit through it to reach supermarkets or shopping malls. After the 1990s reforms, aggregated consumption has declined in relation to production as source of economic growth in China, and particularly production of fixed assets. Therefore, these conditions suggest that infrastructure is mostly functioning as fixed capital.

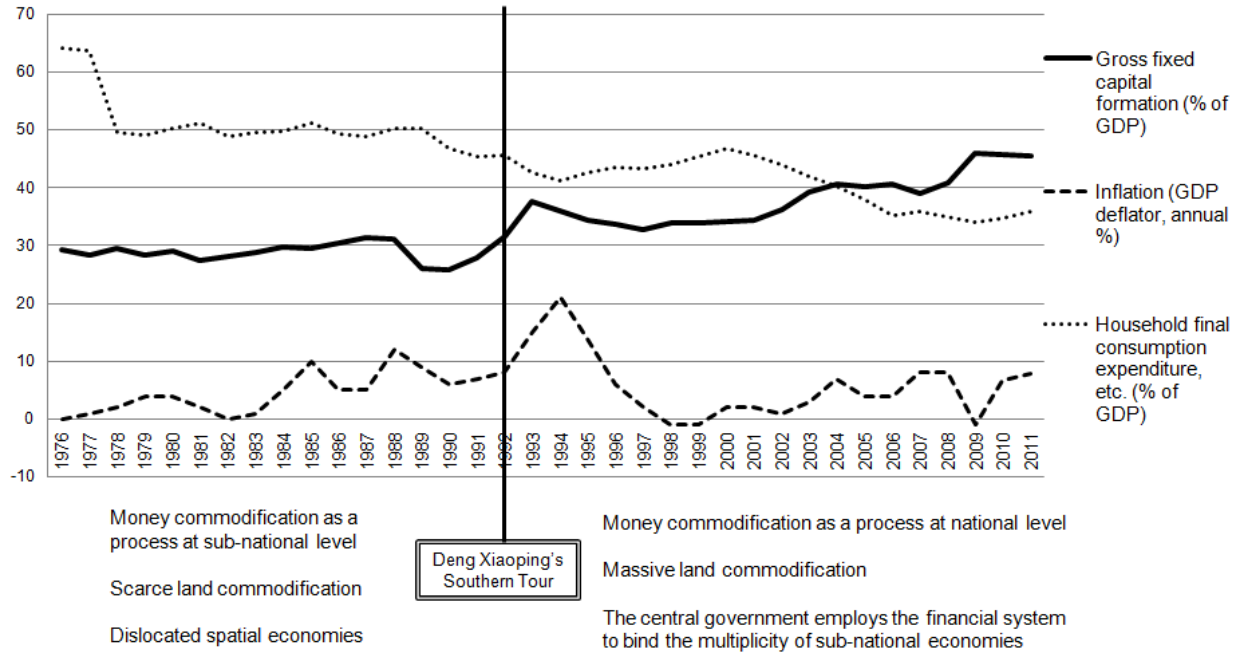
From the early 1990s, gross fixed capital formation (GFCF) in China as a share of the economy started to increase. GFCF is an economic indicator that measures the value of investments in developing or acquiring new fixed capital or funding maintenance of existing fixed capital less depreciation. As an accounting category it includes all tangible assets whose value is not easily converted into money capital. The increase of GFCF in relation to the overall economy means that most of the infrastructure projects are commodities circulating as fixed capital rather than as part of the consumption fund.

The share of GFCF of the GDP registered a relatively constant average of 28.85% from 1976 to 1991 (The World Bank 2012; China Statistical Yearbook 2009). After Deng's Southern Tour, GFCF gradually increased its share of the GDP, from 31.6% in 1992, to 45.5% in 2011 (The World Bank 2012; China Statistical Yearbook 2009) and it would be even higher if statistically including the rent generated from land leasing transactions, which make up an integral part of the process of infrastructure development. In contrast to GFCF, the household consumption share in GDP has gradually declined. This suggests that the goal of accelerating infrastructure development at the national level is to reproduce it, rather than generating consumption for increasing circulation.

Under these circumstances, the role of infrastructure as commodities that form the consumption fund has been declining in relation to its circulation as fixed capital. In other words, infrastructure is circulating for reproducing itself. To some extent, buildings are used to build more buildings, in the same way that in advanced capitalist formations machines are used to make more machines and accelerate accumulation through technological change. This process of capital formation and accumulation would suggest that China is at the edge of a structural crisis. The development of infrastructure inherently constitutes a limit for further circulation of capital and expanding opportunities to produce surplus value from other production-consumption processes. This is the prelude of a structural crisis that can unfold in two possible ways. In the first, the value embedded in the infrastructure projects is realized in accelerated economic growth and over-accumulated capital combines with current production to create even greater pools of surpluses. Devaluation of the money form (inflation) is the most likely outcome of this scenario. In the second possibility, the value locked in infrastructure is not realized and devaluation of capital is internalized in the credit system as debts. The problem that emerges is lack of money capital circulation (Harvey 1982, 1985). Despite accelerated infrastructure development, none of these possible crises has occurred in reform era China after 1992.

Inflation, as depreciation of money capital, has remained on average below 10%. Immediately after Deng's Southern Tour, inflation skyrocketed to 20%, the highest rate in the reform era, but the central government intervened to reduce money supply and cool down circulation of money capital. Neither has economic recession occurred from increasing debt leveraged for developing infrastructure. Capital accumulation in China continues expanding through fixed capital investments. Figure 1.2 shows GFCF, inflation and household final consumption as percentages of the GDP throughout the reform-era China.

Figure 1.2. Fixed capital development in the economy of reform-era China



Sources: China Bureau of Statistics 2009; The World Bank 2013

Development of infrastructure has structured massive capital formation from complementary dynamics of land and money commodification. However, the infrastructural projects of LDCs have failed in generating revenues, resulting in an increasing deterioration in banks' portfolios. Both LDCs and banks structure a process of capital accumulation synthesized in a form of 'debt-wealth' relation. The Chinese government and analysts conceptualize this process as 'public debt'.

Debt has increased in relation to GDP formation particularly since the 2008 world financial crisis. The central government accelerated financial transfers to LDCs to compensate declining exports and sustain economic growth. Before 2008, the public debt-GDP ratio was 39.29% (Wang & Jin 2010); by the end of 2009, this ratio increased to 56% (Brainard & Zhuang 2010). Recently, the Development Research Centre of the State Council published a report that shows the public debt-GDP ratio at the end of 2010 was 59% ('Gov.'s debt ratio reaching and alarming level: report' 2012). Victor Shih has calculated that the total debt would oscillate between RMB

15 and 20 trillion by 2011, being equal to 68% of the GDP in 2011 (Shih 2011; Scherlock 2012; The World Bank 2012).

The increasing importance of the development of state-owned infrastructure through LDCs in terms of capital accumulation raises further inquiries about the way in which all these infrastructural elements circulate and create more capital. Moreover, the continuous expansion of the process in absence of any systemic crises suggests that fixed capital formation and circulation in reform-era China is a process that different state institutions structure, mediate and regulate. The assessment of the 'debt-wealth' relation between state banks and LDCs in terms of capital circulation will provide a better account on the particular segments in the process that allow accumulation with no systemic crisis.

Governing circulation of capital through infrastructure development

Infrastructure projects as commodities circulate in production and consumption according to different 'turnover times'. The 'turnover time' of any commodity is the sum of the time for its production plus the time in which it circulates (Harvey 1985). The length of the turnover time of capital is indirectly related to its capacity to yield high rates of surplus value. Infrastructure projects are commodities that require long turnover times to release the value embedded in them. In the case of expressways, the frequency of traffic determines their turnover time. Expressways that register high flows of vehicles will generate high consumption (toll fees) and therefore a high rate of surplus value, having short turnover times. On the other hand, expressways that register low traffic generate low surplus value and therefore have long turnover times.

The credit system flattens the heterogeneity of turnover times by employing a 'common basis' to all of them: the interest rate (Harvey 1982), the pivot for determining all turnover times of different kinds of commodities, including infrastructure. The interest rate in China is under strict control of the CCP, through the PBOC, making possible the sustained channeling of financial capital to fund vast unprofitable projects of LDCs. 'The engine at the heart of the debt markets is the valuation of risk and this is missing in China because the Party controls interest rates…the debt market cycle takes place within a regime of controlled interest rates and suppressed risk

valuations that are the corollary to the Party's control over the allocation of capital' (Walter & Howie 2011, p. 146).

If the interest rate fluctuated in China, LDCs would be under high financial constraint and risk, which would force them eventually into bankruptcy. Low interest rates are more favorable to LDCs, allowing them to continue developing projects by reducing their debt service. This is indirectly related to the increase of purchasing power of individuals who deposit savings in banks expecting to expand their capital. The controlled interest rate attaches all turnover times to infrastructure development of LDCs under control of the multiple governments below the national level. Thus, I will coin the term 'governed turnover time' for conceptualizing the control of the Party-state over the time of construction and circulation of infrastructure.

The control of the interest rate in favor of LDCs influences the overall circulation of money capital in the economy. The central government, through the PBOC, complements sustained funding for infrastructure development with *ad hoc* monetary policies that reduce monetary mass and avoid overheating the economy. In the same way, the PBOC also structures policies that maintain equilibrium in the state's bank accounts, between massive inputs of capital in the form of savings from the people and accelerated output of capital in the form of loans. The control over and constant adjustment of the banking system is crucial to maintaining its stability and sustaining accumulation through fixed capital development.

Infrastructure elements connect spatially to constitute a physical matrix of related elements. In this sense, determining interrelated locations of each element is a crucial aspect influencing their circulation as commodities. Local governments engage in shaping the spatial interrelation of infrastructure to increase the capital accumulation of LDCs on the basis of state land ownership. In this sense, urban planning is a spatial strategy of economic governance over capital circulation (Abramson 2007) and, therefore, a way in which governments in localities structure their particular political agendas (Hou & Leaf 2006; Xu 2008).

Towards an understanding of the laws of motion of capital and urbanization

The development of many kinds of infrastructure projects since 1990s has constituted China's main engine of capital formation and accumulation. Infrastructure is not merely 'public utilities'

that the government develops as natural monopolies to reduce the cost of constant capital and increase the profits of private corporations as it happens in capitalist contexts. Rather, infrastructure development is a process that creates state-owned wealth through the convergence of dynamic processes of land and money commodification in which LDCs and state banks are the main agents. This condition pushes the conceptualization of infrastructure in China beyond the limits of the 'public realm', inherently problematizing the state-market relation. The duality of public and private is consequently limited for conceptualizing processes of capital formation and accumulation in a political economic context where the Party-state has remained in control over land and money, as basic means of production from which commoditization unfolds urban transformation.

The way in which the dynamic and heterogenic configurations of government institutions structure the circulation of capital for developing infrastructure has different overlapping moments. The state-owned banks in the credit system allocate money capital in the form of loans to LDCs. Then these corporations acquire constant and variable capital to develop infrastructure projects, such as expressways, which circulate as commodities in the process for generating surplus value. Control of the interest rate reduces time of circulation as a factor in increasing surplus value. Instead, the credit system, mainly through banks, issues more money as capital to fund further rounds of fixed capital development.

When LDCs receive a new round of funding for development projects they still hold accumulated debt from previous unpaid obligations; this is when the debt-wealth relation between banks and LDCs forms. The monetary representation of the value of infrastructure projects in this process is the contradictory formation of debt, in the accounting system of banks, and wealth, in the accounting system of LDCs. For example, a state bank that funds the development of an expressway will register the loan as debt (liability), whereas for the LDC the expressway will represent wealth (asset) in its portfolio.

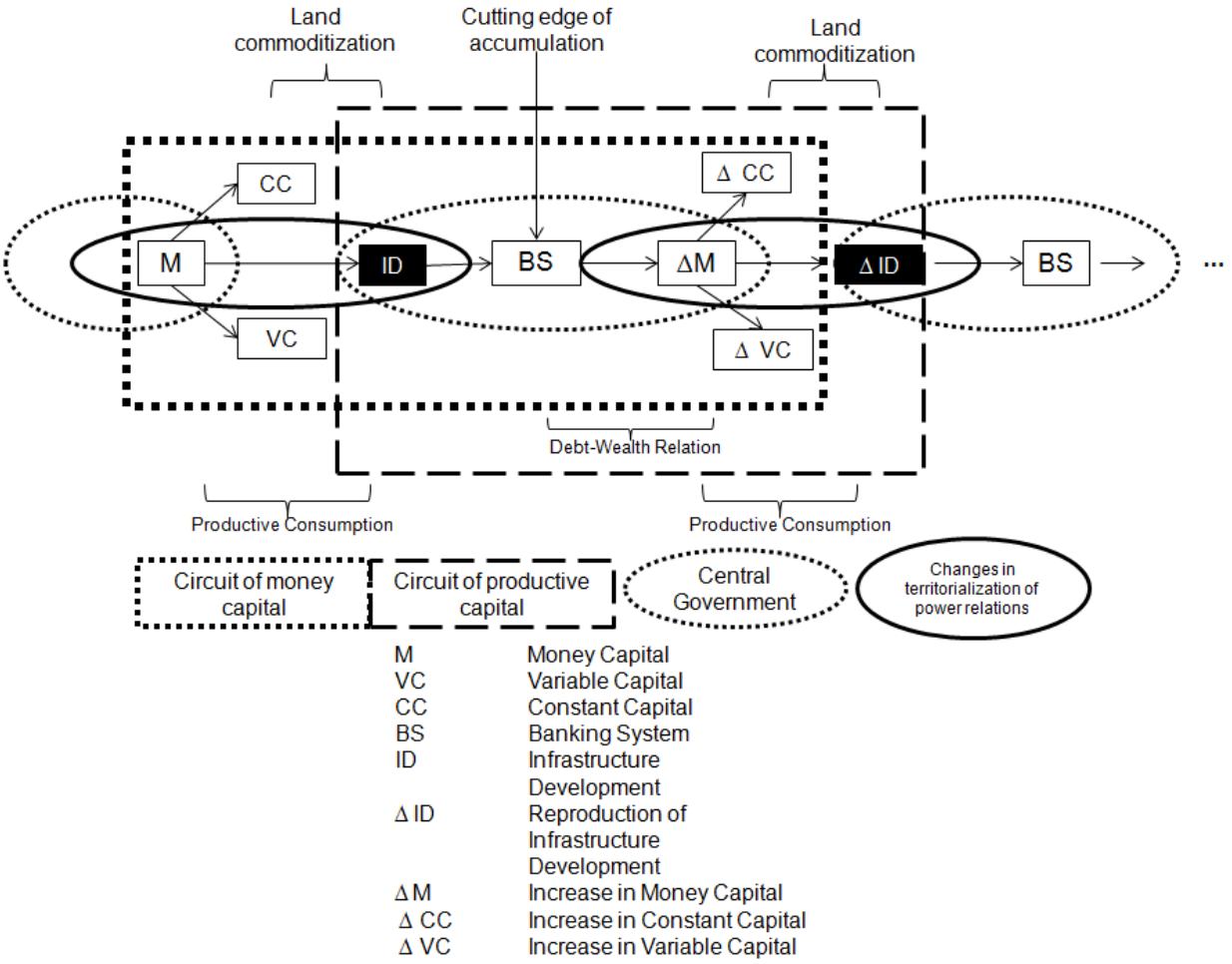
Acceleratead development of infrastructure in monetary terms is possible by increasing loans to LDCs. In other words, it is in this part of the process where money capital increases its amount without necessarily being generated by consumption of the infrastructure projects. Therefore the credit system, particularly banks that manage vast pools of savings and allocate equally vast

funds to LDCs, is the cutting edge of accumulation in this process. Infrastructure development materializes dispossession of people's savings in favor of state-owned wealth creation.

The central government reproduces the process of producing infrastructure as commodities by creating scalar configurations through changes in the territorial administrative system. Scalar configurations determine the temporality of the process by which LDCs transform money capital into commodity form. For example, LDCs operating at provincial level of the spatial administrative hierarchy would have access to larger amounts of money capital from the state-owned banks than their equivalents at the prefectural or county levels. This allows LDCs at provincial level to engage in developing infrastructural projects at shorter periods. Therefore, the central government, specifically the State Council that has under its control the corporate governance of the state banks, overlaps with the dynamic changes of territorial power relations in two moments of the process. The first one is when the LDC produces fixed capital; the second when state banks channel loans.

Figure 1.3 represents the basic elements and moments in the process that have gradually determined capital accumulation since 1992. The circles represent intersection of scalar configurations in the spatial administrative system and the rectangles represent the different moments of capital circulation. Figure 1.3 presents the generalities of the circulation of capital that materializes infrastructure development as the core of the urban process in China. There are also many singularities in each part of the process. For example, the central government also participates directly in infrastructure development through LDCs under its own administration. One of these central LDCs is the China Railway Corporation (CRC), the former Ministry of Railways that the central government restructured and corporatized. Other large LDCs that also develop projects at the national level are the State Grid and China Mobile.

Figure 1.3. The Urban Process in China



Adapted from Desai, 1979 cited by Harvey, 1982

The LDCs receive money capital (M) from the banking system (BS) for purchasing variable capital (VC) and constant capital (CC) to engange in infrastructure development (ID). Then, LDCs employ the infrastructure projects as collateral for leveraging a larger amount of money capital (Δ M) from the banking system. This is the beginning of a new round of LDCs purchasing even larger amounts of variable capital (Δ VC) and constant capital (Δ CC) for reproducing the process of infrastructure development. Thus, at the end of this process there will be more infrastructure projects (Δ ID). There are two main economic processes that work as windows from where to assess Figure 1.3 for understanding the role of the state in relation to reproducing infrastructure development: the circuit of productive capital and the circuit of money

capital. The former appears in Figure 1.3 as a thin dashed-line rectangle and refers to the actual process of developing infrastructure, and the later appears as the thick dashed-line rectangle and refers to the governing of money capital by state-owned banks for funding LDCs. I will now introduce the circuit of productive capital in a brief discussion on land commoditization as its core dynamic. Then I will introduce the circuit of money capital in terms of debt-wealth relation. This brief discussion of both circuits is an introduction for the content of following chapters. Chapter Two expands discussion of the circuit of money capital, whereas Chapter Three discusses expressway development as commodity production in the circuit of productive capital.

Circuit of productive capital and circuit of money capital in relation to state power

In Figure 1.3, land commoditization appears at the top left hand and right hand corners, immediately above the solid-line ovals that represent changes in territorialization of power relations. In this sense, changes in territorial power relations are directly related to the spatial expansion of infrastructure development. Land commoditization also appears between the dotted-line ovals that represent the function of the central government in connecting infrastructure development to the credit system, particularly banks, for maintaining funding to LDCs. At the bottom of Figure 1.3, parallel to land commoditization, there is productive consumption. This indicates LDCs purchase of constant and variable capital for infrastructure development in relation to changes in territorialization of power relations. Complementary dynamics of land commoditization and productive consumption open and close process of infrastructure development, which constitutes the circuit of productive capital and appears in Figure 1.3 as the thin dashed-line rectangle.

Capital accumulation through infrastructure development under governed turnover time depends on rapid construction. The faster an LDC can develop a project, the sooner it will receive more money capital in the form of loans from the state banks to engage in developing a new project and increase its corporate assets. Time of circulation of infrastructure, as commodities, is then not fundamentally important to determine the overall circulation of capital. Therefore, all contradictions of circulation are synthesized in one limit to circumvent: land commodification.

The temporality of developing governed turnover time of fixed capital is directly related to land commodification.

Sub-national governments and LDCs accumulate capital from land commodification in two main forms. The first is by collecting rent after granting land-use rights to a private corporation. The second is by directly transferring land to LDCs, eliminating land conveyancing fees as part of the costs of production and therefore increasing frontiers of capital accumulation. The sub-national governments appropriate part of the surplus value created from LDC projects by charging taxes or fees. In other words, both land and money capital circulates from sub-national bureaucracies to LDCs and vice versa creating surplus value and increasing state-owned capital accumulation. Multiple and dynamic capillarity in land regimes at sub-national levels then form a complementary relation with state banks to articulate the process of capital production and circulation that materializes in infrastructure development.

Infrastructure development is also a strategy through which governments at sub-national levels control spatial economies within their jurisdictions. Infrastructure affects costs of constant and variable capital, and therefore influences the overall circulation of commodities that shape production and consumption (Harvey 1982). In other words, infrastructure influences market prices and ultimately can reproduce spatial fragmentation of flows of commodities and people. Governments at sub-national levels can still indirectly influence prices of commodities by developing infrastructural projects.

The conceptualization of land commodification constitutes the initial part of the process of state-owned infrastructure development. Harvey (2007) and Nolan (2005) argue that the party-state has dispossessed populations in rural areas of land to lease at private foreign industries and real-estate corporations. Arrighi (2007) and Webber (2008a, 2008b) argue that capital accumulation has actually not been structured from land dispossession in rural areas, because migrant workers that move from the interior to the coastal areas to work still maintain land ownership. These studies on primitive accumulation in reform-era China assume that only private capitalists can perform processes of capital creation and accumulation, assessing land commodification from a public-private conceptualization of the economy. In a comparative assessment of post-socialist political economies of Eastern Europe and China, Szelenyi and Kostello (1996) argued that in the case of the countries in the former Soviet sphere of influence, former party-officials were in

an inherited privileged position to accumulate capital by dispossessing people, and suggested that this could be the future of China in the years ahead. Development of infrastructure in the context of economic reform is not related to the decline of the party-state in China, but with its consolidation as both surplus value creating agent and regulatory apparatus.

The circuit of money capital is the second window in Figure 1.3 from where to assess the role of the state in relation to infrastructure development. The banking system appears at the center of the circuit of money capital. It commoditizes and circulates money capital mainly through loans that it provides to LDCs for infrastructure development. However, there are other financial instruments, such as mid-term notes, derivatives and futures, issued in capital markets by banks or other financial institutions, including FCCs. These financial instruments have been gradually increasing their share of infrastructure development funding. FCCs have structured parternships with state banks to manage, repackage and circulate LDCs debt as wealth funds or other financial instruments for attracting investors and reproducing the circuit of money capital (Stevenson-Yang 2013). However capital accumulation in relation to infrastructure development until now has depended mostly on accelerated land commodification, rather than financial innovation. In other words, banks and other financial institutions in China have not yet controlled the economy through issuing instruments such as hedge funds, derivatives and securities to consume the complete financialization of the economy in detriment of actual production.

After the first round of funding for infrastructure development, LDCs list projects as collateral for obtaining more money capital from banks. At this moment, banks increase money capital circulation to find new infrastructure projects, yet at the same time LDCs register debt. Thus, a 'debt-wealth relation' emerges from the reproduction of the process of infrastructure development. In Figure 1.3, 'debt-wealth relation' appears below the circuit of money capital, right at the moment that the banking system issues more money capital (Δ M) to fund a new round of infrastructure development.

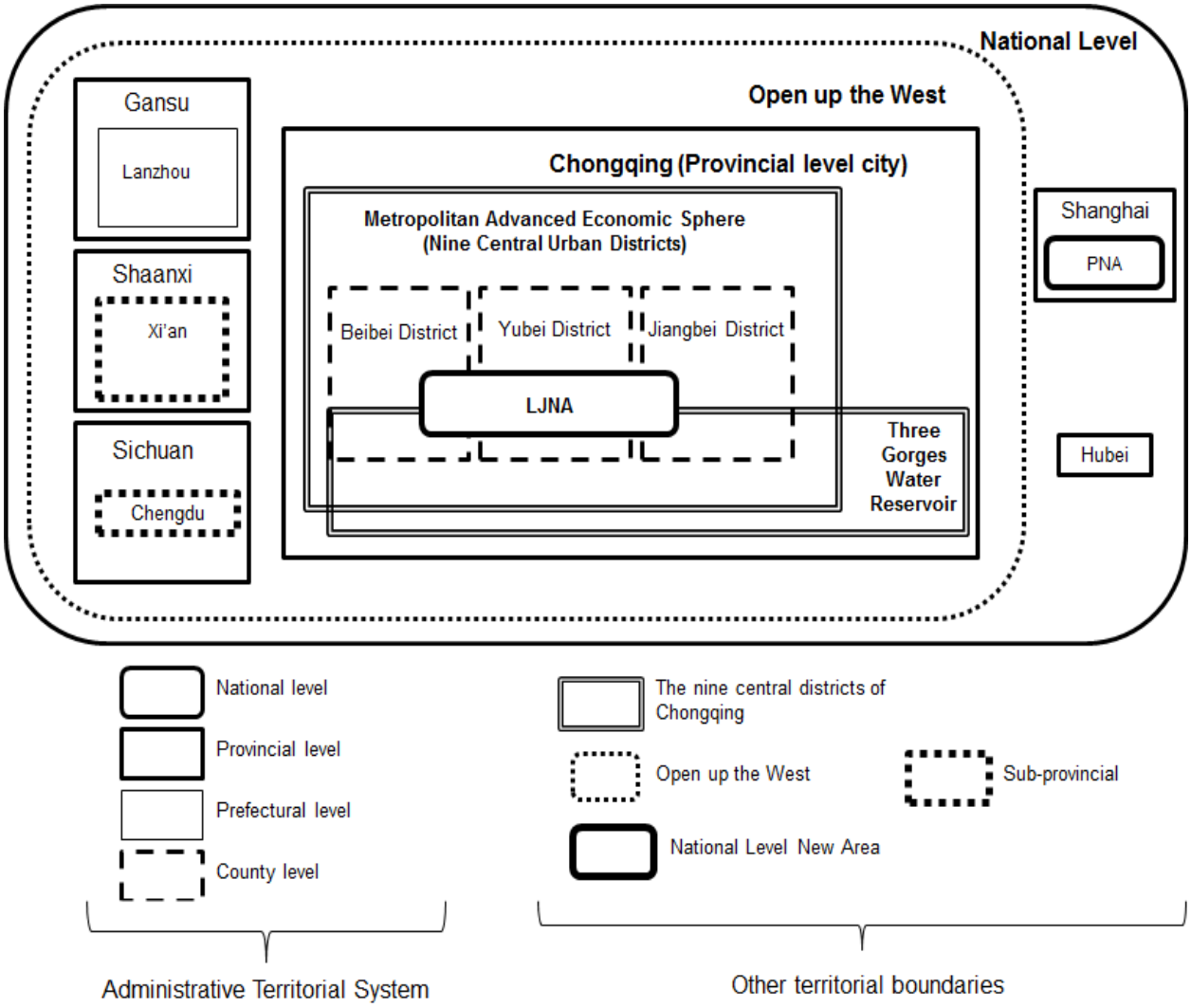
Debt-wealth relations emerge unevenly in monetary terms through scalar configurations of the spatial administrative hierarchy. In other words, debt-wealth relations are related to the position in the administrative hierarchy of the jurisdiction in which LDCs operate. The state banks and LDCs operating in cities at county, prefectural and provincial levels structure the highest 'debt-

wealth' relations in monetary terms. Consequently, cities at all administrative levels will also be the spaces of the most abrupt and accelerated spatial transformations. The increasing creation of districts since 1990s has enlarged the boundaries of cities. These changes establish wider borders for land commodification and thus also increase scope of flows of money capital channeled from state banks. The city governments, through their LDCs, have been the most important recipients of capital for developing infrastructure. In this context, assessing the story of the creation and economic transformation of Chongqing, the largest provincial-level city of China in terms of land area, is a showcase through which to dissect the way in which state banks, the provincial-level city governments and LDCs structure capital accumulation in relation to extensive spatial transformation.

Analytical framework for understanding the urban process in Chongqing

The accelerated development of infrastructure in Chongqing during the past ten years has been the focus of recent studies (Huang 2011; Szelenyi 2011; Cui 2011, 2010). This scholarship highlights the crucial role of the city government of Chongqing in increasing economic growth by developing infrastructure through LDCs. Problematizing this from a spatial perspective I will structure an analytical framework of changes in territorialization of power relations that have shaped Chongqing as a scalar configuration for capital formation and accumulation through infrastructure development. In other words, for understanding the urban process in Chongqing as an economic strategy of state power I will unpack the solid-line circle that appears in Figure 1.3 as 'changes in territorialization of power relations'. Figure 1.4 is a representation of the analytical framework that I develop for assessing the urban process in Chongqing.

Figure 1.4. Chongqing as scalar configuration for infrastructure development



The analysis addresses four level the spatial administrative hierarchy – central, province, prefecture and county – in relation to two central government policies as spatial strategies of economic growth. These two spatial strategies are the regional 'Open up the West' campaign and the creation of national level new areas. In 2010, the central government created Liangjiang New Area (LJNA) in Chongqing, the only national level new area in western China, after opening the first two such new areas in Shanghai and Tianjin. I will also include assessment of the metropolitan advanced economic sphere (都市发达经济圈 *dou shi fa da jing ji quan*) in Chongqing, a territorial strategy through which the city governs economic processes in its nine central city districts, and the Three Gorges Dam water reservoir. There are other four provinces

(Gansu, Shaanxi, Sichuan and Hebei) and one provincial-level city (Shanghai) included in this framework of analysis. In Gansu, Shaanxi and Sichuan are other main urban centers in western China. Their provincial capitals are connected to the nine central districts of Chongqing through the national expressway system. The relationship between Hebei and Chongqing in infrastructure is mainly through the development of the Three Gorges Dam. Finally, the Yangtze River and national expressways connect the nine central districts of Chongiqng, where the LJNA is located, to PNA in Shanghai, in the coastal region. There are three districts within the metropolitan advanced economic sphere that are relevant spaces for capital formation: Beibei, Yubei and Jiangbei. The State Council approved the creation of the LJNA in parts of these three districts. The largest part of the LJNA is located in Yubei district.

Figure 1.4 depicts the nested spatial hierarchies of Chongqing. The main point of the diagram is to facilitate portrayal of adjustments to these hierarchies and related territorial strategies in relation to economic processes, highlighting changes in power relations of the hierarchies that configure Chongqing as a space of economic development in relation to infrastructure development. The central government, by establishing Chongqing as provincial-level city, set it up as a place of importance in the national development landscape. These conditions make the study of Chongqing's spatial transformation particularly interesting for analyzing the many and dynamic ways that the state propels urbanization through economic processes. The state apparatus operates changes in territorial power relations to produce and reproduce complementary dynamics in land and money commoditization that materialize the urban process in China. The formation of uneven and dislocated infrastructural landscapes has its roots in the selectiveness of state territorial development strategies for spurring state capital formation and accumulation.

Chapter 2

The cutting edge of accumulation: governing the banking system of China

In this chapter I will discuss the circuit of money capital that was introduced in Figure 1.3. The relationship between central government control over money commoditization from state-owned banks and changes in territorial power relation is that they reproduce infrastructural development and the circulation of money capital through it. The state-owned banks structure and coordinate credit allocation, debt management and monetary policy for funding the accelerated development of infrastructure as fixed capital. The configuration and changes in territorialization of power relations through the spatial administrative hierarchy operationalize and reproduce these monetary strategies. As provincial-level city, Chongqing gained direct relationships with the central government banking insitutitions that funnel loans to the jurisdiction.

The first section of this chapter discusses how the central government reformed the banking system in order to assume control over credit allocation and debt management. I focus on monetary policies that the PBOC and the Ministry of Finance (MOF), in coordination with state-owned banks, execute to accelerate funding for LDCs while preventing inflation. In the second section I assess the way in which the financial-related ministries of the central government manage large pools of liquid capital to fund increasing debt through the banking system to maintain accelerated infrastructure development. In the final section, I assess the role of sub-national governments at various levels of the spatial administrative hierarchy in administering and reproducing circulation of money capital through infrastructural landscapes. This section assesses how power relations embedded in the administrative hierarchy support state accumulation of wealth through taxation and land commoditization.

Banking reforms and infrastructure development

The commoditization and allocation of money capital for infrastructure development is a complex process that the CCP structures mainly through its banking system. After the Asian Financial Crisis of 1998, the State Council reformed corporate governance of the banking system to assume absolute control of money commoditization. The central government structured this reform in two main ways: by creating Asset Management Corporations (AMC) for absorbing debt and to facilitate money circulation more widely and by centralizing management of state-

owned banks under the State Council. Since the late 1990s the central government has used state-owned banks as the cornerstone of governing credit allocation for LDCs to develop infrastructure. This new configuration of the banking system funded development of larger projects though paradoxically it reproduced uneven capital accumulation.

There are two main sources of financial capital in the PRC banking system: the 'big four banks' and three banks at ministry level. The big four banks (四大银 *si da yin* or 中工农建 *zhong gong nong jian*) are the BOC, CCOB, ABC and ICBC. The three ministry-level banks are the Agricultural Development Bank of China, Export-Import Bank of China and China Development Bank (CDB). The big four banks were either re-established or created during the first years of the reform, except for the ICBC. The central government re-established the ABC and BOC in 1979; and created the CCOB in 1979 and ICBC in 1984. In 1994 during the first years of increasing investment in fixed capital, the State Council officially granted the PBOC governing capabilities over money commoditization through planning and executing monetary policy (Kwong 2011; Fu & Hefferman 2006). In the same year, the State Council approved the creation of the CDB and the other two ministry-level banks (Lin & Zhang 2006). The CDB has been the main source of money capital for funding urban infrastructure development, particularly in western China, contributing to developing most of the national level expressways since late 1990s (Sanderson & Forsythe 2013).

The main difference in how the big four banks and the ministry-level banks commoditize money and accumulate wealth is the way in which they structure their liabilities-assets management. The big four banks can absorb deposits from households or corporations (mainly in the export sector), which represent most of their capitalization for granting loans. In contrast, the PBOC and the MOF fund the three ministry-level banks by issuing bonds and other financial instruments that the big four banks purchase (Kwong 2011). The MOF employed RMB 1.55 trillion from the foreign exchange reserves pool to create and capitalize the China Investment Corporation (CIC), a state-owned financial institution for managing capital injections to SOEs, including ministry level banks.

Banking loans are the most important financial instrument that operationalize money commodification. Approximately 80% of LDC funding for fixed capital development come from bank loans (Deloitte 2012, p. 2). Although LDCs also receive capital from corporate bonds, mid-

term notes and other similar financial instruments, the amount of capital these instruments bring is much lower than bank loans. The state-owned banks package the money capital as loans that they transfer to LDCs by mortgages and pledge agreements (Deloitte 2012). But while the direct contractors of the debt are the LDCs, it is the sub-national governments, as their major stakeholders, that are ultimately the debtors. There are two main ways for classifying their debt: contingent explicit debt and contingent implicit debt. In both cases, sub-national governments are ultimately the guarantors of payments or responsible for credit defaults of their LDCs (Li & Lin 2011).

Reforms in the reproduction of the circuit of money capital

During the 1980s and early 1990s sub-national governments structured complementary strategies for funding SOEs in charge of infrastructure development. At lower levels of the spatial administrative hierarchy, township and county-level governments carved out spaces for increasing revenues by establishing taxes derived from administrative processes (i.e. issuing permits, authorizing development of new facilities, and the like) within their jurisdictions. At higher levels, provincial SOEs had access to large amounts of capital from state banks (Zhang 1999; Oi 1992; Wu 1999). The circulation of money as capital for infrastructure development, controlled by sub-national level governments, materialized in small infrastructural projects concentrated in the coastal region, where bureaucracies accumulated more money capital from production. This was directly related to the protectionist price regime and preferential investments the central government impose in favor of the coastal region (Wedeman 2003). In other words, the state apparatus reproduced the circuit of money capital unevenly.

In 1994 the central government approved a watershed fiscal reform for shifting tax revenue collection in its favor, and to the detriment of sub-national governments. Paradoxically, the latter remained the main actual investors in infrastructure development. The financial imbalance between reduced revenues and increasing expenditures forced sub-national governments to restructure the process of developing and operationing infrastructure. The 1994 fiscal reform and the creation of LDCs converged in shaping a new institutional assemblage from which flows of

money capital and infrastructure development produced accelerated spatial transformations of urban space in China (The World Bank 2006; Wang & Zhang 2008; Wang & Jin 2010; Wu 2010). The provincial branches of the big four banks started to channel credit to LDCs to fund infrastructure projects, accentuating the unevenness of the dislocated small infrastructure landscapes of low-surplus value production.

The financial consequence of the creation of the LDCs and the 1994 tax reform was an increasing amount of non-performing loans (NPLs) that led to a deterioration of banks' portfolios and an initial stage of a default-cascade at national level. Thus, the central government, through then Premier Zhu Rongji, stepped in to restructure the banking system in late 1990s by employing two strategies: the restructuring of debt and centralization of the banking system. The State Council created AMCs to absorb and manage accumulated debt in banks (Nanto & Sinha 2002; Kwong 2011), absorbing debt worth USD 173 billion from the big four-banks. At the same time, the MOF injected the same banks with new capital worth USD 34 billion, increasing their lending activities (Kwong 2011, p. 165). The central government reproduced the same process in the 2000s. The State Council approving in 2003 the creation of Huijin Investment Corporation, another AMC that maintained periodic money capital injections to the big four banks as well as central SOEs (Li & Lin 2011). From 2003 to 2006, the big four banks received three more rounds of capital injection worth USD 195 billion (Kwong 2011, p. 165-166).

The second major reform in the process of money commoditization was the centralization of governing credit allocation and debt management of the provincial branches of the big four banks. After the Asian Financial Crisis, then Premier Zhu Rongji decided to centralize the governance of the banking system in terms of loan granting and debt management. This reform granted the State Council direct control over the decision-making process of the big four banks. The institutionalization of this reform was the creation of the Central Financial Work Commission, which as given direct control over bank managers of all local branches of the state-owned banks (including the PBOC) and other financial corporations. Consequently, this reform granted the central government control over capital allocation and debt structure (Shih 2007;

Heilmann 2005).[7] The State Council decided the temporalities and scope of funding LDCs and other SOEs, a process that it structured according to regional and national policies (Walter & Howie 2011; Shih 2008).

In western China, money capital started to materialize in the development of large infrastructure from the 1990s. For example, in 1994 the Sichuan provincial government officially opened to traffic the Chengdu-Chongqing expressway, the first in western China (CPPCCCHS 2011, p. 36). In the same year, the CDB started financing the first stages of the Three Gorges Dam in Chongqing. However, it was not until the late 1990s, after the AMC reform and centralization of banking control, that the central government circulated money capital for accelerating infrastructure development in the interior. In 1998, the State Council started preparing transfers of money capital to fund various infrastructural projects that were part of the 'Open up the West' strategy.

To extend circuit of money capital from the coastal region to the interior, the central government relied on an increasing pool of capital constituted by foreign exchange reserves and household savings. These two streams of liquid capital have increased since the 1990s (Berger et al. 2009; Landry 2003; Shih 2009b). In 1999, the PBOC's foreign exchange reserves were worth USD 154.67 billion; by 2012 this amount surged to USD 3.33 trillion (People's Bank of China 2013).On the other hand, domestic private savings have increased in relation to GDP. At the beginning of the reform era, gross domestic savings were 37.3% of GDP; in 2011 this share reached 52.5% (The World Bank 2012). The state-owned banks have used household savings and foreign exchange reserves as liquid capital for leveraging money capital in the form of loans to LDCs for developing large infrastructure. However, as in the 1990s, increasing debt has been accumulating in banks' portfolios (Xu & Yeh 2005; Shih 2008).

A new round of debt

The territoriality of debt-fueled infrastructure differs in location and projects from the early 1990s. The banking system has channeled increasingly money capital to the administrative

[7] The Hu-Wen administration replaced the Central Financial Work Commission in 2003 with four specialized commissions, one each specialized in banking, securities, insurance and monetary policy. The State Council remained in direct control of these institutions (Heilmann 2005).

units of the interior. The debt accumulated from LDCs operating infrastructural projects in western China was approximately 27% of the total debt of sub-national governments by 2010 (HFT Investment Management Limited n.d.). The real-estate industry was one of the main economic activities of LDCs throughout the late 1990s and early 2000s. However, this situation has changed in the past four years. Until 2010, the loans of the real estate industry were the main components of banks' asset portfolios. Bank investment in real estate accounted for about 23% of fixed-assets investment in China (Deloitte 2012, p. 4). But since 2010 the main assets of the banking industry have been loans for urban infrastructural projects (Deloitte 2012). Loans for funding development of roads, expressways and other transportation infrastructure, as part of the urban infrastructure landscape, have been increasingly significant. In 2011 22.9% of total bank loans transferred to LDCs were for developing transportation infrastructure (Orlik 2011). In the particular case of expressways, the state-owned banks transferred approximately RMB 1.11 trillion to LDCs specifically for developing these projects (National Audit Commission 2011, p. 11). Accelerated development of urban infrastructure, including transportation infrastructure, in Chongqing from 1997 has been generating increasing debt. From 2002 to 2011, the city's government and its LDCs developed 2,000 km of expressways, investing approximately RMB 81.51 billion (Hu 2010; Hu & Yang 2011, 2012; Yan 2012).

In the immediate aftermath of the 2008-09 World Financial Crisis, the National and Development Reform Commission (NDRC) and the big four banks coordinated transfer of money capital to LDCs (Tan, Liao & Zhong 2011). Before the crisis, the public debt-GDP ratio was 39.29 (Wang and Jin, 2010). Whereas the end of 2009 this had increased to 56 (Brainard & Zhuang 2010). There has been an intense debate on the dimension of China's public debt at the core of which is the problem of integrating a comprehensive accounting system that includes all LDCs to understand the full dimension of the debt. The main problem is that there is no a standard definition for LDCs (Tan, Liao & Zhong 2011). The LDCs have a dispersed accounting system throughout all levels of the administrative system that includes other financial institutions at sub-national level, making calculations of loans, debt and assets a complex task. For example, a loan could represent an asset in one corporation, but a liability in another while actually both could be subsidiaries of the same corporation (Lei 2012; 'Fuzzy shadow banking' 2012; Simpferdorfer 2013; Wang & Zhao 2013).

The China Banking Regulatory Commission, the PBOC and the National Audition Office issued reports on the public debt, with different results. The National Audit Office reported the debt of LDCs was RMB 10.7 trillion by 2011. However, according to Victor Shih, a leading researcher on the topic, that estimation omitted loans granted to subsidiaries of LDCs. Adding those off-balance sheet liabilities, the total would oscillate between RMB 15 and 20 trillion by 2011. Taking Shih's maximum estimate for the local government debt, it would be equal to 68% of GDP in 2011 (Shih 2011; Scherlock 2012; The World Bank 2012). China's financial leverage is still far from similar situations in capitalist economies, such as Japan which registers a public debt-GDP ratio of 180; Germany or the United States, where the ratio surpasses 85 and 80 respectively (Wang & Jin 2010).

The LDCs have generated debt not just by receiving money capital for developing unprofitable infrastructure, but also by leveraging even more capital for covering the costs of operation and maintenance. Infrastructure, as fixed capital, requires long time spans to generate enough profits to pay back debt or, in some circumstances, revenue to cover operating costs. Moreover, shorter construction times in China accentuate this inherent structural contradiction of fixed capital in terms of circulation. In other words, LDCs have so many projects under way that the time for recovering their investments is always extended by new rounds of short- or even mid-term loans to cover costs of operation. This extra money capital is approximately RMB 1.17 trillion every year (Li & Lin 2011). The central government is now in position to govern temporalities of the debt of state-owned banks and consequently it also has control over financial risk and derived credit defaults. The banking system under control of the State Council constantly extends time horizons for debt payments. In other words, the central government always delays the fulfillment of debts by simply extending the payment deadline of loans (Zhang & Tremblay 2011), providing LDCs with more space to manoeuvre to receive new loans (Zhang & Tremblay 2011).

The central government, through the PBOC, MOF and the main state banks, structure two strategies that allow the reproduction of the circuit of money capital by maintaining the transfer of capital to LDCs and extending the maturity of their debts. These two strategies are the control of the interest rate and the sterilization of liquid capital that the banking system receives as corporate savings from the export industries. The complementarity of these two strategies

consists in governing liquidity for leveraging increasing debt to maintain infrastructure development.

Governing debt and liquidity

The reproduction of circulation of money capital for sustaining accelerated infrastructure development is based in repressing inflation and a large-scale default of loans. The control over the interest rate, in an economic context leveraged by debt-fueled infrastructure development, is the cornerstone for reproducing circulation of money capital and preserving the system. The central government controls the interest rate to guarantee that infrastructure development will not accelerate the circulation of money and cause inflation, or on the other hand, that it will not trigger a cascade of unpaid debts that breaks the continuity of the system. Households absorb the cost of governed interest rates in favour of LDCs; and thus indirectly subsidize infrastructure development. The interest rate operates as the core of state-owned wealth accumulation through infrastructure development.

> (…) the Chinese state fixes both the interest rate ceiling on deposits and the interest rate floor on lending rates and keeps deposit rates very low in under to subsidize lending to the SOE sector. This means that households, which are mostly depositors, are forced to subsidize the borrowing costs of the SOEs, which receive the bulk of bank loans in China' (Vermeiren 2013, p. 15).

Control over the interest rates is the synthesis of governance over the turnover time of fixed capital. Hence, the central government ultimately decides the relationship between debt created for funding a project, profits it generates and the amount of surplus value that goes back to the banking system to stabilize the system. The governed interest rate determines a spread for banks between profits from lending money to LDCs and costs from receiving deposits of households; thus it guarantees banks constant profits as long as LDCs keep developing infrastructure, even if they generate debt in the mid and long term. In the same sense, as long as private domestic deposits and foreign exchange reserves from exports continue flowing into the coffers of the banking system, the PBOC has space to manoeuvre in govering interest rates for securing healthy spreads for state-owned banks.

The liberalization of interest rates would allow turnover times, debt and profits to fluctuate, not necessarily under market mechanisms, but at least out of the reach of the central government's plans and targets. The governments of coastal provinces with higher economic development support liberalization while those of western China are against it (Shih 2009a). The main reason for such discrepancy is the hypothetical effects on credit allocation of interest rate liberalization: for the economically developed coastal provinces this could mean even greater opportunities to attract investors and leverage more financial capital, but provinces of western China still rely on most of their capital being channeled by state-owned banks as part of preferential policies, such as 'Open up the West' (Shih 2009a).

The second strategy of the central government to reproduce the circuit of money capital is to govern liquidity that the banking system receives from export industries. This strategy aims to sterilize the effects of increasing inflows of money capital to prevent depreciation. In other words, the central government seeks to prevent the increase of money in circulation by containing credit expansion of banks to households or other productive activities apart from LDC investments, and thus preventing depreciation of money capital as inflation. The central government, through PBOC, has been doing this in two ways: issuing central bank 'treasury notes', and governing the lending dynamics of banks through adjustments in reserve requirements ratios (Greenwood 2008; Ma, Yan & Xi 2011).

The PBOC issues 'treasury notes' for purchasing foreign currency that state banks receive from exports. Therefore, for each USD the PBOC creates RMB (Davies 2013). The PBOC operates this process on daily basis, and it is directly related to the exchange rate (Greenwood 2008). When the PBOC withdraws USD from circulation, it lowers the value of the Chinese currency down, artificially establishing an exchange rate favorable to exports. The implication of this strategy for governing money capital is that it establishes foreign exchange reserves in contradictory role within the banking system. On one hand, they are an asset with which to reproduce lending dynamics, but on the other the PBOC turns them into debt by 'sterilizing' them in the form of 'treasury notes' that state-owned banks have to purchase. In case the central government decided to operate a large-scale repayment of debts of LDCs employing foreign exchange reserves, this would actually be counterproductive in relation to sterilization tools because it will trigger circulation of money and eventually depreciaton of the RMB (Davies

2013). The export industries would be severely damaged and the stability of the entire system would be in danger. Moreover, foreign exchange reserves are directly related to the overall performance of the world economy. In other words, if the economies to where Chinese economy exports to are in recession, this would directly affect revenues, exposing the liquidity of the banking system to fluctuations in the world economy.

The PBOC adjusts reserve requirement ratios of banks as another way of sterilizing liquidity. The PBOC has actually relied more on this financial governing strategy over the last seven years than using 'treasury notes' to withdraw money from circulation: 'Between 2003 and 2006, the PBOC had relied heavily on central bank bill issuance as the main sterilization tool to drain surplus liquidity. But since 2007, the PBOC has leaned more on the reserve requirement system as the principal tool to freeze liquidity …' (Ma, Yan & Xi 2011, p. 8). From 1984 to 2003, the PBOC adjusted the reserve requirement ratio of banks just six times. However, from 2006 to 2011 it adjusted this ratio 35 times (Ma, Yan & Xi 2011). In the years after the 2008 world financial crisis, the PBOC increased the ratio from 7.5% to 17.5% (Ma, Yan & Xi 2011). Adjustments in the reserve requirement ratio, as a financial governing strategy of money commoditization, allow the PBOC to operate sterilization regularly and at lower costs than 'treasury notes'. The higher the reserve requirement ratio for banks, the less money capital is in circulation. In other words, this sterilization tool forces banks to maintain a strong liquidity base. However, to compensate for the reduction in profits, a cost of fewer loans resulting from adjustments in the reserve requirement ratio, banks increase the cost of debt to borrowers.The LDCs cover with subsidies from sub-national governments whose infrastructure they build and operate (Ma, Yan & Xi 2011). The rate of these subsidies is directly related to the tax regime of the sub-national governments; thus, once more households are the part of the process that absorbs costs of financial transactions to maintain accelerated infrastructure development.

The strategies of sterilizing money capital help to maintain a favorable foreign exchange rate that supports increasing exports and at the same time represses domestic consumption. In the particular case of the reserve requirement ratios, this strategy represses credit expansion and enforces allocation of money capital for LDCs (Vermeiren 2013). In this scenario, the central government can maintain accelerated infrastructure development, and simultaneously reduce inflationary risks. In sum, the combined effects of controlled loan-deposit interest rates and

reserve requirement ratios maintain a tight monetary policy that in fact secures profits to state-owned banks in the short term, despite accumulating increasing debt from LDCs (Ma, Yan & Xi 2011).

Banks have incorporated other financial corporations to circumvent PBOC policies over money commoditization in order to maintain loan expansion and secure even higher profits. The banks package and sell debt of LDCs or other SOEs in the form of new and increasingly circulating financial instruments called 'wealth management products' (Guilford 2014). Trust companies or other financial institutions execute the brokerage for banks to sell wealth management products to investors by charging a commission for the transaction. These financial instruments offer attractive high-yielding rates to investors (Soh & Wang 2011; Hui 2013). The latent risk in this practice is the potential exponential leverage that it represents, once this practice is outside the reach of the PBOC financial governing strategies. The trust companies and other intermediaries lack financial liquidity to cover potential defaults (Guilford 2014). In other words, despite the governing of the PBOC over money commoditization, the threat of a financial crisis triggered by a cascade of credit defaults remains latent.

Funding the LDCs: forming debt-wealth relation in urban China

The central government allocates money capital to LDCs mainly through the big four banks and CDB. However, not all LDCs obtain the same amount for infrastructure development and consequently not all of them develop the same kind of projects in terms of size and capabilities of generating surplus value. The state-owned banks have channeled money capital to LDCs according to the land value of the jurisdiction in which they operate (Walter & Fraser 2011). Therefore, there is a substantial difference in value between a plot of land in a county located in the middle of the rural hinterlands of Inner Mongolia, and another in the suburban areas of the urban core of Shanghai. In the same sense, both LDCs receive different amounts of money capital.

> The more valuable the land, the stronger is the platform's capacity for borrowing (…) The stronger a local economy, the greater the potential profit of such a development and the greater the interest other investors may have in participating in the equity of the platform through wealth-management products developed by trust companies and sold to the bank's high-net-worth customers (Walter & Fraser 2011, p. 124).

The amount of money capital that state-owned banks transfer to LDCs is directly related to the level of the spatial administrative hierarchy in which they operate. LDCs that develop and operate infrastructure at provincial-level jurisdictions receive more money capital from banks and can attract even more investors than their counterparts at county or prefecture level jurisdictions (Xie et al. 2011). Thus, although the State Council governs the banking system at the national level, it is crucial to consider territorial power relations to understand money commoditization and circulation in relation to multiple strategies of infrastructure development. Approximately 70% of the LDCs are under control of county governments (Deloitte 2012, p. 3); they develop and operate small size projects, and thus receive limited money capital from the banking system. LDCs operating at higher levels of the administrative hierarchy are receiving most of the money capital that is ultimately accumulating as debt. At the end of 2011, the money capital transferred from banks to LDCs operating under direct management of the county governments accumulated 22.1% of the total debt of sub-national governments in China (Orlik 2011), meanwhile, the money capital transferred to the LDCs at prefectural level materialized in infrastructure development that generated 27% of the sub-national government debt (Orlik 2011).

Money capital circulates through LDC-funded infrastructure projects in substantially different ways. Sub-national governments provide injections of money capital to LDCs through tax exemptions, subsidies and transfers to reduce their asset-liabilities ratio in the short term and increase their profits. In other words, the major stakeholders of LDCs artificially turn them into 'profitable corporations' by obtaining money from other sources and channelling it into their budgets. For example, increasing tax on electricity consumption could finance development of expressways.Though this strategy is not designed to reduce the systemic disequilibrium in terms of debt, it effectively channels even more money capital to LDCs that allows them to operate in the short term. By 2010, approximately 50% of the LDCs at all sub-national levels of government were receiving payments or subsidies from income streams other than projects they operated (Ding 2010). Complex arrangements of budgetary and extra-budgetary revenues include increasing taxes and collecting revenues from land commoditization transactions (Garcia, Schwartz & Le 2011). Another source of subsidy from sub-national governments is toll

fee payments from expressways, however only provincial governments can collect and redirect money collected from toll fees to LDCs, which in 2011 totalled RMB 180 billion (Green 2011).

The economic relationship between infrastructure development and land commoditization influences the amount of budgetary revenues collected by sub-national governments. Fluctuations in land value affect leveraging of money capital from the state-owned banks. The loans that the banks package as mortages or pledges often use infrastructural projects or plots of land as collateral. A collapse in land values would undermine the LDCs loan stream from banks. Low land values also diminish extra-budgetary revenues of the sub-national governments through reduced subsidies and transfers to LDCs (Lu & Sun 2013). Land commoditization is therefore intertwined with circulation of money capital in the forms of subsidies, transfers or loans. Indeed, revenues from land sales as extra-budgetary funds have been increasingly important for sub-national governments for increasing subsidies and transfers to LDCs. Land sales in 2013 were approximately 34% of total revenues of all sub-national governments on average (Lu & Sun 2013, p. 8). Therefore, adjustments in territorial power relations of the administrative hierarchy impact the relationship between land sales, tax revenues and transfer of money capital to LDCs.

Although the provincial-level city LDCs register the highest risk of default, the LDCs at county or even township level are at actual risk because their major stake holders have limited access to transfer and capital injection subsidies (Tong & Tao 2010). A substantial amount of the accumulated debt in the banks is from loans provided to LDCs in the four provincial-level cities: Chongqing, Beijing, Shanghai and Tianjin. In 2011, these LDCs accumulated 43.51% of the total debt (National Audit Commission 2011, p. 4). The governments of Chongqing and Tianjin manage the LDCs with the largest asset value and accumulated debt (National Audit Commission 2011). However, these two cities'governments have extensive sources of taxation and other income streams available to them for subsidizing their LDCs and artificially reducing their risk. Chongqing and Tianjin also register the highest revenues from land sales as a percentage of their overall tax revenues. These two city governments collected land sales in 2013 that represent 48% and 43% of their total revenues respectively (Lu & Sun 2013, p. 8). Consequently, their tax revenues from budgetary sources have also increased, carving out new spaces from where to redirect money capital to reduce the asset-liabilities ratio of their LDCs.

For example, Chongqing's tax revenue has increased in the past six years (Chongqing Financial Bureau 2008, 2009a), and so its subsidies to its LDCs, particularly to the one in charge of developing expressways in the city, the Chongqing Expressway Development Corporation (CEDC). The budgetary revenue of Chongqing government in 2009 was 35.3% of its GDP (Chongqing Financial Bureau 2008, 2009a) from when it increased subsidies to the CEDC: the Chongqing Financial Bureau (CFB) transfered RMB 17.41 billion worth of subsidies to the CEDC from 2008 to 2011 (Hu 2010; Hu & Yang 2011, 2012; Yan 2012). In the same way, the Chongqing city government can redirect increasing revenue from certain CEDC projects to fund other infrastructure projects. Its most profitable project by far is the Chengdu-Chongqing Expressway. In 2009, its toll fees amounted to 38.74% of total revenue for the CEDC (He & Lin 2011, p. 16).

The central government has recently formulated new policies to strengthen its governing powers over LDCs in 2014. The NDRC enforced a policy to restrict the participation of private developers in Built-Operate-Transfer (BOT) infrastructure projects in order to reduce financial leverage. Under BOT project contracts, the developer acquire rights to build and operate the project for a certain period of time, after which it has to transfer back the project to the leaser, generally government. It requires LDCs to present a liabilities-assets ratio between 80 and 90 for issuing corporate bonds to attract more investors (Huo & Yang 2013). Another policy of similar trend is a pilot programme allowing sub-national governments to issue bonds for increasing capital injections to LDCs. The MOF initially executed this policy in a provincial-level city (Shanghai), a sub-provincial level city (Shenzhen) and a province (Zhejiang), before adding three provinces (Shandong, Jiangsu and Jiangxi), one provincial-level city (Beijing) and another sub-provincial level city (Qingdao) (China eases rules on bond sales by local governments 2014). Under the current situation, even though the central government directly controls most of the processes of credit allocation, debt management and liquidity sterilization, it still has to mediate any financial reform with the sub-national governments, particularly at provincial level.

Reproducing and regulating money capital circulation through the infrastructural landscape

The state-owned banks work as financial tools of the central government to commoditize money and transfer it in the form of credit for developing of infrastructure. In this sense, LDCs and all

governments below the national level are recipients to which the central government channels money capital. The banking system in China employs the spatial administrative hierarchy to operationalized the transfer of money capital to LDCs ('AIC 2012 Interview: Victor Shih' 2012). This process also reproduces unevenness in the production of the urban landscape and circulation of money capital through it. Although sub-national governments structure time-horizons for land commoditization to reproduce infrastructure landscapes in their jurisdictions, what allows them to do this is the centralized control over money commoditization and debt management derived from the banking reforms of late 1990s. During the years when the process of money commoditization was under the control of provincial governments, LDCs received limited money capital and consequently developed small infrastructural projects. Money capital circulated mainly within the boundaries of the provincial level jurisdictions, materializing dislocated infrastructural landscape with different and fragmented time-spans. Therefore, banks also had a dislocated grip on governing debt. The limited amount of funds in the provincial branches of state-owned banks and other county-level financial institutions could only provide reduced funds to LDCs, impacting their assets value formation and profits in the short term. The decentralized and dispersed reproduction of money commoditization during the first two decades of the reform era created an infrastructural landscape of low assets value. Under these conditions, the central government was not able to control the inherent inflationary effects of rampant money printing and accelerated credit allocation, as occurred in the late 1980s and again in the early 1990s.

The centralization of processes of money commoditization changed the scope and time-span of spatial transformation in reform-era China. The central government, mainly through the PBOC and MOF, concentrated enormous amounts of money capital from household savings and foreign exchange reserves in state-owned banks, allowing it to control circulation of money capital at the national level to fund infrastructure projects in the context of regional or national level policies, such as the 'Open up the West' campaign, such is the case of projects like national-level network of expressways and the Three Gorges Dam. The development of any infrastructural project in China is the materialization of financial liquidity and processes of land commoditization.

The central government structures strategies for governing the excessive liquidity in China's banking system to sustain transfers of money capital to LDCs. More important, it manipulates

bank loans maturity and governs interest rates, allowing LDCs to defer payments and continue reproducing infrastructure production. The central government ultimately determines the amount of money capital leveraged as debt and the surplus value that infrastructure projects generate by changing territorial power relations among sub-national governments. The sub-national governments alter money capital circulation through the infrastructural landscape by channeling funds from other revenue sources or profitable projects to subsidize LDCs. Therefore, any change in the territorial configuration of a sub-national government directly affect its governing capabilities they have over land, infrastructural projects and other resources.

Changes in the spatial administrative hierarchy shape the way in which sub-national governments at all levels structure subsidies to LDCs. For example, the provincial-level cities control the corporations that have accumulated the largest debt but have increasingly subsidized them as they have come to rely on their growing tax revenues. The central government can expand the budgetary sources of sub-national governments by adjusting the boundaries of their administrative units, directly impacting their capabilities of providing capital injections to their LDCs. In this sense, the central government can turn the systemic imbalance caused by the increasing 'public debt' accumulated in the state-owned banks into a 'fiscal problem' to be restructured by manipulating the spatial administrative hierarchy. Thus, it is not necessarily through a systemic credit crunch or inflation that is the only way in which the system can stabilize and avoid increasing debt. The core of reproducing money from the infrastructure landscape is the way in which governments and LDCs redirect circulation of money capital through the different productive activities and projects.

The development of infrastructure in China creates state-owned wealth by dispossessing households. The central government controls the interest rates and the reserve requirement ratios of banks to subsidize credit to LDCs, yet at the same time these strategies imply the undermining of earnings that deposits can yield for households. In the realm of circulation, changes in the territorialization of power relations in relation to taxation increase subsidies to LDCs so they can pay back debt or generate profits. Taxpayers directly absorb the costs of this strategy of governing circulation of money capital. In sum, every infrastructural project is the crystallization of state-owned capital accumulation by dispossessing households.

Chapter 3

Producing fixed capital: the roads of China

This chapter will discuss the circuit of productive capital shown in Figure 1.2. The process of funding and developing infrastructure in China has changed during the reform era. In the 1980s, governments below the central level invested in developing small infrastructural projects in their respective jurisdictions. However, from the 1990s accelerated land commoditization and vast flows of financial capital increasingly materalized in large-scale projects that shape the current urban landscapes of China. The LDCs at the provincial level have been the main developers and operators of these projects. In addition, interrelated processes and bureaucracies structure the spatial transformation of developing urban places. It is important to look at the LDCs in relation to the banking system to grasp a comprehensive picture of the spatio-temporal roots and trajectories of urban development in China.

In the first section of this chapter I discuss the emergence of LDCs in the context of tax reform of 1994, as well as the way in which they complement land and money capital for infrastructure development. The second section discusses the nomenclature and production process of roads, followed by the corporate governance of LDCs that are in charge of developing and operating expressways. The final part of the chapter assesses the process of road production as a strategy of capital accumulation.

Taxation at sub-national level: accelerated infrastructure development

The governments below the central level controlled financial capital allocation and changes in land use until the middle of the 1990s. The central government reformed the fiscal and financial systems in 1994 and 1997 respectively, which reconfigured the temporalities of spatial transformation and the process of infrastructure production. Throughout the 1980s and early 1990s sub-national governments, mainly at county level, designed multiple tax categories to obtain revenue, mostly from SOEs to fund infrastructure development within their jurisdictions (Oi 1992; Wu 1999). Then in 1994 the central government reformed the distributive

configuration of the tax system, which increased its own share of tax revenues and reduced those at all lower levels of the administrative hierarchy. Nevertheless, the localities were still responsible for investing in infrastructure development (Zhang 1999).

The sub-national governments faced a growing revenue shortfall after the 1994 tax reform (Park et al. 1996) and decided to separate infrastructure development from the direct control of their bureaus. Instead, all bureaucracies created their own corporations with more flexible management able to carve out ways for obtaining funds. This was the genesis of LDCs (Wang & Zhang 2008, 2009; Xu & Yeh 2005; Wu 2010; Lin 2011; Wu 1999). The Shanghai city government created the first LDC in 1992: the Shanghai City Construction Investment Company (Wang & Zhang 2008).[8] It was in charge of developing water supply facilities, sewerage and roads, a model LDC that the other governments sought to emulate when reforming their own SOEs (Wong 2013a, 2013b).

Prior to the 1994 tax reform, transportation infrastructure development was in the charge of the local bureaus of communications or construction. Under financial shortages, sub-national governments created LDCs to develop expressways, light trains, airports and other transportation infrastructures projects. However local bureaus were still providing part of the funding and technical advice on developing and operating projects. There is a multiplicity of different institutional arrangements in which these two parts of the process of infrastructure development work together. For example, provincial-level cities and other major cities, such as Guangzhou, Shenzhen and Wuhan, have the most centralized bureaucracies for planning and developing road networks. The governments of these cities follow the logic of 'one city, one communication authority' ('one city, one communication' 一城一交 *yicheng yi jiao*) (Xu 2012) and each concentrates authority for road networks in a comprehensive communications planning and developing authority. In the provincial-level cities, the Chongqing Communications Bureau (CCB), the Tianjin Transportation and Port Bureau, the Shanghai Transportation Bureau and the Beijing Bureau of Transportation plan and fund LDCs that develop transportation infrastructure. This includes expressways, railways, water channels, airports and other kinds of transportation infrastructure (TTPA 2014; Chongqing

[8] Wong (2013a) mentions a different name for the first LDC in China: the General Corporation of Shanghai Property.

Communications 2014; SMTC 2014; BMCT 2014). However, city governments at prefecture and county levels have no authority over the funding and operation of expressways within their jurisdictions, once they have become the prerogative of provincial level governments.

The creation of LDCs reconceptualised infrastructure development from being a utility-producing economic activity (事业 *shiye*) to an industry (产业 *chanye*) (Zhang et al. 2007). In other words, sub-national governments restructured the process of infrastructure production as a strategy of commodity production for capital accumulation. The main productive activity of LDCs is the development of core infrastructure, especially infrastructure for transportation (roads, bridges, tunnels, railways, ports and airports), energy (electrical power and gas supply), water management (drinking water supply systems, sewerage and water treatment), telecommunications, waste management and other urban facilities (parks, auditoriums, museums, libraries) (De et al. 2011). However, these corporations also engage in other economic activities, such as commodity production, land commodification and speculation, banking functions and trading (The World Bank 2007; Walter & Howie 2011; Cui 2011; Huang 2011b).

In the 1980s and early 1990s, governments of all localities used tax revenues to create urban maintenance and construction funds as the main sources for funding infrastructure development (Zhang 1999; Wu 1999; Wu 2010). The creation of LDCs introduced banking loans and corporate bonds as new sources of capital (Wong 2013a, 2013b). Deprived of control over credit allocation, governments below the national level engaged in land commoditization to obtain revenues from leasing fees as a way to increase subsidies to LDCs and, ultimately, as a way to pay back loans (Wong 2000; 2013a). In the 1990s these governments engaged in land commodification dispossessing rural collectives of land and turning it into urban state-owned land (Lin & Ho 2005; Lin 2009), not to attract foreign investments, but to carve out more space for developing new projects and to collect revenues to subsidize LDCs.

There are two main processes by which LDCs appropriate land for infrastructure development. The first is by forming joint-ventures with rural collectives, which can also have their own development corporations, to leverage debt for developing projects by using land as collateral (Hsing 2010). In any case, the state-owned banks are the main source of funding. In the second

process, governments, through the infrastructure related bureaus dispossess peasants of their land through state expropriation (Lin 2009; Xu et al. 2009). After appropriating land, governments can circulate it in two ways: transfer it directly to LDCs for infrastructure development, or lease it to a non-state land developer by charging conveyancing fees. In the first case, the transaction is an administrative allocation and has null cost, whereas in the second, governments and developers generally negotiate the rate of land conveyance fees (Xu et al. 2009). Subsequently, the LDC can either employ land as capital for accumulation through immediate project development or keep it in store it as part of its inventory to speculate on its future value increase and lease it to another land developer (Lin 2009). In any case, the corporation will collect profits, either in usage fees from the project or in conveyancing fees when it leases the land to other developers. In sum, since the mid-1990s, governments below the national level engaged in land commoditization to obtain revenues to subsidize their LDCs. The position of each jurisdiction in the spatial administrative hierarchy determines how much capital is transferred from state-banks to LDCs, and therefore the temporal horizon of land commoditization. The higher the government is in the administrative hierarchy, the more land it can commoditize (Cartier 2001).

By 2009 governments of counties and county-level cities held of 59.6% of the 8,221 LDCs that were operating in China (Walter & Fraser 2011, p. 121) although the four provincial-level cities controlled the largest in asset value and market capitalization (Walter & Fraser 2011; Wang & Jin 2010). In Chongqing, the LDC that manages most assets in monetary value is the CEDC. In 2011, CEDC assets were RMB 113.579 billion (Gao & Yan 2012, p. 5). This corporation is in charge of developing expressways in Chongqing. In 2012, it registered 91.6% of its portfolio as fixed assets and just 8.4% financial capital (DCPAC 2011, p. 5). The largest LDC in China in terms of assets is Tianjin Urban Infrastructure Development and Investment Corporation (TUIDIC) (Cai 2012) with registered assets worth RMB 542.44 billion in 2013 (CWAF 2014, p. 3). This conglomerate is under the direct control of Tianjin city government and develops and operates the city subway system and roads. In 2013 66.3% of TUIDIC's assets were infrastructural projects and 33.7% financial capital in the form of loans provided to other SOEs (CWAF 2014, p. 3-4). At the end of 2012, the four provincial-level cities were among the top eight administrative units that used revenues from land fees to subsidize LDCs in servicing their debt. The Tianjin government financed 64.56% of its subsidies and debt payments from land fees; Chongqing and Beijing governments collected land fees that financed 50.89% and 55% of

their respective payments. Finally, land fees in Shanghai financed 44.06% of debt payments (Liu 2014).

Road development has been one of the main activities in which LDCs have been engaged since 1990s. In 1992, there were 1.05 million kilometers of roads in China and by 2010 this was 4.08 million kilometers (China Bureau of Statistics 2011). Road development, as economic activity of production, also includes the development of nearby areas. The LDCs can develop other projects, such as petrol stations, shops, gardens or parking lots, in areas beside roads; or alternatively they can lease these areas to other developers, collecting land conveyance fees from the transaction. Plate 3.1 shows a road development area in Jiangbei district, Chongqing, where we can see the road and the adjacent land that the LDC has also prepared for development.

Plate 3.1. Road development in Jiangbei district, Chongqing. In the area around the road the developer can install gardens or other pedestrian facilities. Photograph by the author

The roads of China: nomenclature and development

The development and operation of roads is a complex economic process that involves different technical parameters and categories. Each project in a road network has particularities not just of spatial location, but also in operation and usage. LDCs engaged in road development have, therefore, many ways in which to develop and manage their projects. This section discusses road development in China in terms of nomenclature, funding, management and usage as part of larger processes of creation and accumulation of capital.

The Ministry of Communications (MOC) has designed and approved one system of nomenclature for road infrastructure in China, however, there are two ways of classifying roads. The first one is according to the jurisdiction that plans, funds and develops the road. According to this classification, there are six main categories: national expressways, standard national, provincial, county, township and village. This classification differentiates the national expressway (国家高速公路 *guojia gaosu gonglu*) from the other five caterogies that are roads (道 *dao*). The second way of classifying roads is according to the technical characteristics. According to this criterion, there are two categories: expressways (高速公路 *gaosu gonglu*) and highways (公路 *gonglu*). Highways are further divided in four grades (级 *ji*) according to the number of lanes and types of vehicles that can transit through them. In terms of funding, the first grade highways (一级公路 *yiji gonglu*) are large projects that require the highest amount of funding, and the fourth grade highways (四级公路 *siji gonglu*) are smallest projects that require low funding. Besides these four grades, this classificatory criterion has a fifth subcategory that includes all roads that have specific uses in airports, ports, military compounds and other facilities. The statistical bureaus of governments below the central level use this way of classification of roads to register and structure transportation budgets and subsidies to LDCs. Figure 3.1 presents the overlaps of these two ways of classifying roads as well as the official nomenclature and the function of each element of the road networks.

Figure 3.1. The road infrastructure of China

According to funding source and planning	According to technical characteristics	Technical characteristics	Source of funding	Nomenclature	Function
National expressway 国家高速公路 (*guojia gaosu gonglu*)	Expressway 高速公路 (*gaosu gonglu*)	Four, six or eight lanes. For passenger vehicles (except motorcycles) and cargo vehicles	Provincial-level governments and state-owned banks	G + one to four digits	Connects urban areas at national level
Standard national road 普通国道 (*putong guo dao*)	First-grade highway 一级公路 (*yiji gonglu*)	Four or six lanes. For all kinds of passenger vehicles and cargo vehicles	Provincial-level governments and state-owned banks	G + three digits	Connects national-level expressways to small urban areas
Provincial road 省道 (*sheng dao*)				S + one to three digits	Connects ports, airports and other infrastructure facilities within provincial-level administrative units
Standard national road 普通国道 (*putong guo dao*)	Second-grade highway 二级公路 (*erji gonglu*)	Four or six lanes for all kinds of passenger and cargo vehicles	County- and prefecture-level governments	G + three digits	Connects ports, airports and other infrastructure facilities within county-level administrative units
County road 县道 (*xian dao*)				X + three digits	
County road 县道 (*xian dao*)	Third-grade highway 三级公路 (*sanji gonglu*)	One to four lanes. For all kinds of passenger and cargo vehicles	County- and prefecture-level governments	Nothing specific	Connects rural to urban areas and elements of the built environment within urban areas.
Township road 乡道 (*xiang dao*)	Fourth-grade highway 四级公路 (*siji gonglu*)	One or two lines. For light vehicles and motorcycles	Towns, townships and village committees	Y + three digits	Connects villages to expressways and provincial road networks
Villare road 村道 (*cun dao*)					

Sources: 'List of All National Expressways of China' n.d.; 'Standard of the People's Republic of China. Code for Highway Classification' 2002; MOC 2007; Mahadevia 2007; Li 2012a; NDRC 2013; DPITMOT 2013, 2010

According to Figure 3.1, expressways are roads with particular characteristics that the central and provincial governments fund. In other words, these projects are roads that require special funding and technical characteristics; and therefore the central government directly plans them through the MOC and the NDRC. However, provincial-level LDCs are the actual developers of expressways (GPADB 2008). The MOC approved the plan for the National Expressway Network Plan (国家高速公路网规划 *guojia gaosu gonglu wang guihua* NENP) in 2004 (Li 2013), after years of negotiation during the 1990s with provincial-level communications bureaus on the location of all expressways in the network (Li et al. 1999). The '7918 network' (7918 网 7918 *wang*) represents the spatial plan of the NENP. There are seven major expressways to the capital, nine major expressways that run south to north and 18 that run east to west. The total length of this network is 85,000 kilometers (Li 2013).

Figure 3.1indicates another network of roads that the central government plans: the standard national roads (普通国道 *putong guo dao*), make up a subsidiary network of the NENP. These roads, according to their technical characteristics, can be either first- or second-class highways. The central government also directly plans and funds the development of these roads. As shown in Figure 3.1, sub-national governments are in charge of developing first- to fourth-grade highways, forming their respective road networks. The MOC has included all road networks in a national comprehensive transportation strategy of development by which the national territory is divided into 10 corridors, five from north to south and five from east to west (Xu 2012).

A juxtaposition of the two ways of classifying road development shows that the position of a government in the administrative hierarchy is directly related to its funding capabilities and consequently to the grade of the highways that its LDCs can develop and operate. LDCs at provincial levels develop and operate projects of the NENP, while those at lower levels are in charge of low-grade projects. LDCs obtain financial capital from banks and subsidies from the transportation or communications bureaus at provincial level to develop the most expensive projects of all road networks in China: expressways and first-grade highways. Otherwise, villages and jurisdictions at county level mostly fund third- and fourth-grade highways, forming the village and county networks, China's longest. In 2000, the combined length of the roads of these two networks was 39.45% of all the road systems combined, and by 2010 this proportion had increased to 61.1% (DPITMOT 2013, 2010). I use Plates 3.4 and 3.5 as a graphic

comparison of the different technical characteristics of a third grade highway developed by a county government and a national expressway that a provincial LDC developed.

From left: Plate 3.4, a third-grade highway in Yunnan province that connects villages to the county seat. Villagers who use motorcycles or similar motorized vehicles are the frequent users of this kind of road. Plate 3.5: an expressway in Sichuan province that connects Chengdu to Chongqing. Photographs by the author

There are three provinces that claim to have the first expressway open to traffic in China. In southern China, the Guangdong government started to develop the Guangzhou-Foshan expressway in 1986, and three years later it was open to traffic ('25 Years of Developing Expressways' 2013). In the northeast region, the Liaoning provincial government claims that it started the construction of the Shenyang-Dalian expressway in 1984, opening it to traffic in 1990 ('Liaoning: the Shenyang-Dalian Expressway' n.d.) and in the coastal region, the Shanghai city government claims to be the first in opening an expressway, referring to the 18.5 km toll road it started to operate in 1988 (Zhang et al. 2007). All these projects were developed prior to the 1994 fiscal reform and thus before the emergence of the LDC-banks funding structure. Technically, based on current project definitions, these three expressways are best described as highways.

As commodities, expressways have the particularity of occuping multiple spaces at once, going through different jurisdictions. Therefore, planning and investing in the production of a

commodity of this nature must take into consideration all spaces for its circulation. Provincial-level transportation bureaus discuss and negotiate the development of each national expressway segment, indirectly shaping the development of provincial and county road networks (Zhang 2011).

LDCs and the production of expressways

The process of transforming expressway development into an industrial activity happened at different times across China. The governments of the coastal provinces in the early 1990s were the pioneers in creating LDCs for expressway development, specifically of Guangdong and Zhejiang (Li et al. 1999). Provincial-level administrative units of western China started this process in early 2000, after the central government announced the 'Open up the West' programme, under which the MOC defined expressways as key transportation infrastructure for the region, and transfered loans to LDCs to develop projects (Li & Shum 2001). Thus, by virtue of its head start, the coastal region has the highest density of combined roads of all networks (Xu 2012).

The transformation of expressways into an industrial activity consisted essentially of splitting the process. The provincial governments granted LDCs the development, maintenance and operation of expressways, while giving auditing capabilities and planning decisions of other road networks to the transportation authorities. The main difference of producing an expressway as a commodity under the framework of LDCs is that these corporations can register and manage expressways as their corporate assets under different contractual arrangements. This ultimately leads to entraining a process of capital accumulation that would otherwise not have been possible within the budgetary structure of transportation bureaucracies. Moreover, these conglomerates can list their portfolios on stock markets to raise capital or form joint-ventures with other state or non-state corporations (Li et al. 1999). Expressway developers started to participate in financial markets in 1995. Most of these corporations have from 20% to 40% of their stock listed in Shanghai, Hong Kong or Shenzhen (GPADB 2008). In Plate 3.2 and 3.3 expressway signs show intersections in urban areas of high road density in Sichuan and Chongqing.

From left: Plate 3.2, a traffic sign in Sichuan shows the intersection of an expressway and a Sichuan provincial road. Plate 3.3, this traffic sign in Chongqing shows the intersection of four expressways. Photographs by the author

Provincial governments continued creating LDCs to build expressways either by merging existing ones or restructuring and recapitalizing others that were not necessarily engaged in transportation infrastructure development (Zhang 2011). The arrangement by which the provincial transportation authority grants an LDC a contract for developing and operating expressways is the BOT scheme. Under this contractual arrangement, LDCs develop the project and have special rights to operate it for periods of 20 to 30 years. After this time, technically the provincial government will assume control of the project (Zhang et al. 2007).

The 1997 banking reform consolidated the state-owned as the main source of funding for LDCs in expressway development (Hu & Shi 2009). In this context, there were two contractual arrangements that formalized the relation between the money capital that state-owned banks transfer as loans, the projects that LDCs develop, and land commoditization and financial transfers that government at provincial level perform. The first of these is the banking loan and the second is the BOT scheme. What the packaging of transfers as loans technically means is that were corporations unable to fulfill its obligations, the bank would acquire operating rights over the project. In other words, the ultimate owner of China's expressways is the banking system. Provincial-level governments, as major stakeholders of LDCs, are actually the main agent responsible for servicing debt. However, they frequently extend the BOT time period in order to grant LDCs more time to operate expressways and collect revenue (Zhang et al. 2007).

In 1997, the State Council formally approved the first regulation governing the transfer of expressway development and operating rights. In 2004, the MOC and NDRC announced the NENP, which concentrated decision-making processes for funding and locating expressways. In the same year, the State Council granted provincial governments the right to charge fees on first-grade highways, and announced official guidelines for the regulation of toll fees based on expressway length (Li 2012a). According to these regulations, LDCs must develop expressways longer than 30 kilometers to be able to charge a fee; the first-grade highways that charge toll fees cannot be shorter than 50 kilometers; the two-lane expressway bridges and tunnels that charge fees cannot be shorter than 800 meters; and the four-lane expressway bridges and tunnels that charge fees cannot be shorter than 500 meters. Furthermore, under this regulation only provincial-level adiministrative units in central and western China can charge fees in second-grade highways, though these projects must be longer than 60 kilometers (GPADB 2008, p. 16-17).

The packaging of loan transfers after the late-1990s pushed further reforms on LDCs. The Provincial governments started to restructure their LDCs into more flexible corporations able to manage higher debt. The expressway developer corporations then emerged with intricate and flexible corporate structures of subsidiaries and off-balance contracts that allow them to manage risk and maintain high rates of funding despite their reduced capabilities to produce profits. There are two main kinds of subsidiary corporations that perform specific tasks: expressway-operator companies (高速公路经营公司 *gaosu gonglu jingying gongsi*); and stock-holding corporations (股份有限公司 *gufen youxian gongsi*) (Zhang et al. 2007).

The first kind of subsidiary is a subcontractor that the LDC creates for operating or managing a single or several specific expressways. The second is for attracting other state or non-state investors to create joint-ventures or equity investments. It is also a financial platform that lists expressways as assets on stock markets or issues corporate bonds or other financial instruments to attract investors. The state-owned banks provide brokerage services for selling corporate bonds to investors (Fan & Chan-Kang 2006), which are actually in many instances other state-owned banks or other state financial institutions. The LDC can also create these subsidiaries to manage debt, reduce risk and create 'healthy accounting balances' to attract investors.

Expressway-operator companies often assume control and management of a specific project under the 'one road, one company' (一路一公司 *yilu yi gongsi*) structure. This allows the LDC to manage debt and cash flows to create profitable balances in its subsidiaries. In terms of debt, the LDC fragments all liabilities among subsidiaries and can absorb the debt of particular non-profitable expressways. In terms of cash flows, subsidiaries that operate profitable expressways can maintain cash inflows for paying costs of operation, attracting investors or even subsidizing other subsidiaries (Zhang & Weng 2011). It is common that expressway-operator companies actually manage and control most of the parent conglomerate's assets. This also gives the appearance of a multiplicity of land developers that are in competition bidding for projects, when actually they all belong to one single LDC.

Operating companies that function as LDC subsidiaries have formed joint-ventures, equity investments and other kinds of partnerships with domestic and foreign non-state corporations, especially after the 1994 tax reform. The first wave of non-state investment in the reform era was from the mid-1980s to the mid-90s, mainly in transportation, energy and water provision and treatment. The second and most important wave of investments in terms of the amount of capital arrived after the tax reform. These focused on the transportation sector, and particularly on expressway development (Chen 2010; Cheung & Chan 2011).[9] The first projects in partnerships with non-state investors were in SEZs, 39 transportation infrastructure projects from 1990 to 1995 or 38% of these partnership projects. The LDCs of other jurisdictions created the remaining 62%. In the second wave of these projects, the LDCs of Guangdong and Fujian provinces, created just 13% of the partnership projects in China (The World Bank 2014).

According to the World Bank's Public-Private Infrastructure Advisory Facility database, development of expressways in China has been an attractive sector for non-state investors since the 1990s. From 1990 to 2012, 24.4% of projects with registered non-state capital were in the transportation sector, and 57.8% of those projects were expressways (The World Bank 2014). Non-state corporations are majority stakeholders in 59.7% of such projects (The World Bank 2014). The most popular contractual arrangement for non-state investor participation in expressways development is the BOT scheme (GPADB 2008).

[9] Infrastructural projects in transportation include expressways, airports, seaports and railways.

Expressways as elements of the physical framework for production and consumption

The use of expressways in everyday life and their spatial relations with other transportation infrastructures create barriers and connections that segment the circulation of people and commodities. Users need to pay expressways; and provincial communications or transportation authority establishes toll fees (GPADB 2008). The revenues generated are the highest of all industries in China in relation to the construction cost ('Expressways Operators under Scrutiny of the Central Government' 2011) and operating costs (Reja et al. 2013). Expressway tolls are a very profitable income stream for all bureaucracies.

Toll posts on expressways that the MOC and NDRC recognize and regulate, influence market prices by increasing the cost of transport (Tou 2011; Chung 2011), particularly in certain industries, such as logistics and manufacturing industries (Wu 2012). The final user absorbs this cost by paying more when consuming the product. Expressways also shape the movement and flow of people and commodities by spatially concentrating activity in some areas and directing it away from others. In tourism, toll fees are important determinants of the flows of travellers across China. During holidays, the MOC suspended tolls helping the profits of the tourism sector reach the highest for the year ('The Toll Factor' 2012). Householders that have private cars have to pay greater costs in toll fees than in fuel or maintenance. This rising cost for customers affects demand and can ultimately increase automobile production costs in China (Midler 2010). Plate 3.6 shows the different lines in a toll collecting according to the kind of vehicle that transit through.

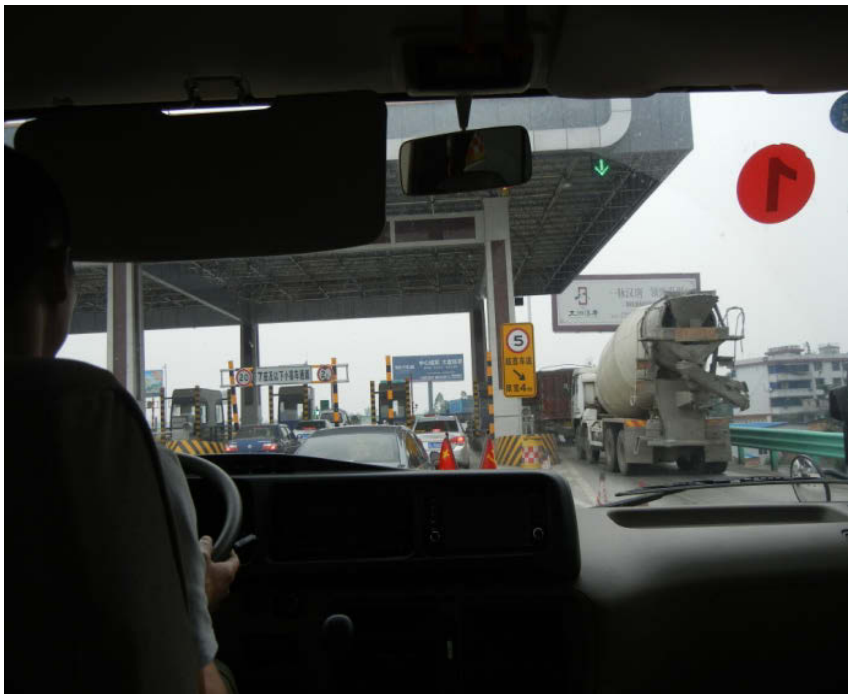


Plate 3.6, toll posts control traffic flow dividing vehicles into different lanes, according to their number of seats, in the case of passenger vehicles, or for freight the weight of their load. This toll plaza is on an expressway in Sichuan. Photograph by the author

Expressways also function as 'invisible walls' (Chung 2002, p. 155) that constrain the flow of people and commodities. To access urban areas, populations of rural areas have to sort out alternative routes to avoid paying expressway fees (Chung 2002). In such instances, the NENP map turns into one of obstacles and barriers that people must circumvent to transit throughout the segmented urban landscape of China. Moreover, only passenger and cargo vehicles are allowed on expressways and first-grade highways, excluding rural people who use farm vehicles or small three-wheel vehicles known worldwide as 'tuc-tucs' (三轮车 *sanlunche*).

The central government classifies rural vehicles as machinery of the agriculture industry instead of being part of the automobile industry (Sterling et al. 2004). There is a wide variety of rural vehicles; the most common are three-wheel vehicles, farm tractors, two-wheel motorcycles, mini gasoline trucks and tractors, which people in rural areas use to transport commodities from farm to markets, for contracted delivery and short-distance passenger transport (Sterling et al. 2004). This does not mean that rural vehicles will never appear in urban areas. Many rural migrants take their vehicles and adapt them to urban life to perform services, such as delivery and transportation service (Hayman 2013). The formal prohibition of rural vehicles entitles law

enforcement agents to charge fees for use of expressways or remove them. In sum, expressways shape 'laddered' flows of people and commodities (Graham & Marvin 2001). The sing in Plate 3.7 illustrates this, emphasising how expressways are barriers for the kind of vehicle that appears in Plate 3.8.

From left:Plate 3.7. An expressway traffic sign in Chongqing shows clearly what- and who- chan and cannot use the road, mostly rural users. The expressway is the boundary between rural and urban areas. Plate 3.8. Two men ride a 'tuc-tuc' in a rural area in Dandong city, Liaoning province. Photographs by the author

Governments below the national level also set up numerous illegal toll posts not just in along expressways but on roads of all grades. The MOC develops campaigns to monitor the problem and periodically sends supervisory teams and officials to abolish these arbitrary toll posts, meant to obtain liquid funds and enlarge annual budgets ('Ministry of Transport: Studying the Cancellation of Toll Fees in First Grade Highways' 2012).

Debt and profits in the production of expressways

Governments at the provincial level create and capitalize LDCs for producing expressways as strategies for capital accumulation. Toll fees constitute profits for the LDCs and are the monetary representation of the surplus value that the consumption of the expressways generates. Moreover, LDCs have low costs of operation and maintenance, as well as reduced costs of debt servicing,

which increases profits in the short term (Hun 2012). However, the overall financial situation of LDCs engaged in expressway development in the long term tells a different story: profits from toll fees are low compared with total debt.

The state-banks continue as the main source of funding for expressway development, in 2011 they provided approximately the 75% of funding in the form of loans (Zhang & Weng 2011). In 2009, LDCs extended the length of expressways to 65,000 kilometers (Song 2011, p. 87), increasing debt leveraged for developing expressways in 37% by the following year (Cox 2013). The approximate sum of all LDCs liabilities in this sector of transportation infrastructure was RMB 1 trillion (Zhang & Weng 2011). In contrast, the other funding streams, such as equity investments, corporate bonds, securities and mid-term notes provide approximately 10% to 15% of the total capital the expressway developing conglomerates require. The rest comes from subsidies of the local governments (Zhang & Weng 2011).

The central government has reformed road development and administration regulations to provide a legal framework for facilitating financial capital transfers to LDCs. In September 2008, the NDRC approved the document 'On the transfer of highways toll fees rights'. This document extended to 25 years the period in which LDCs can operate and obtain benefits from expressways under BOT agreements with provincial governments ('Publication on the Regulation of Transfer Rights of Operation of Expressway 2008). However, the new regulation extended to 30 years all LDCs operating in administrative units of western China, where revenues from toll fees are lower than in coastal areas, increasing these companies' risk (Zhang & Weng 2011).

At the beginning of the reform era, the State Council emphasized reinvesting revenues generated from toll fees to pay debt, ('obtaining loans to develop roads and collecting fees to pay loans' 贷款修路, 收费还款 *daikuan xiulu shoufei huankuan*) ('Official from the Auditing Commission: The policy of receiving loans to develop roads and collecting revenues but continue receiving loans should continue' 2008). Developing fixed capital necessarily requires debt to bridge time frames between surpluses from present and future production. Therefore, there always has to be debt flowing to finance development of new projects. The point of this policy was not that LDCs achieved complete fulfillment of obligations to creditors, but rather to focus on paying debt

service to maintain the system in equilibrium. However, this has not been the case. LDCs continue receiving loans to develop new projects, collecting revenues and still receive more loans. In other words, the policy line now seems to be 'obtaining loans to develop roads and collecting fees to continue borrowing' (贷款修路, 收费还贷 *daikuan xiulu shoufei haidai*) ('Official from the Auditing Commission: The policy of receiving loans to develop roads and collecting revenues but continue receiving loans should continue' 2008).

The accelerating production of expressways and the reduced profit making in relation to debt mean that the reproduction of this process is based on production itself, rather than any complementary dynamics of consumption. Capital accumulation through the production of expressways is reproduced by making more expressways rather than by collecting more fees to put towards more expressways. Despite the increase in debt, the process of producing expressways as commodities continues and is accelerating. Expressway development contributes to increasing land value and speculation, and thus LDCs can also collect rents from land leasing. However, the main source of revenue for LDCs is still expressways – they keep reproducing the relation between land commoditization and debt leverage for materializing more projects. The provincial governments ultimately employ expressways as cash hoovers (吸金机器 *xijin jiqi*) (Zhang & Weng 2011), particularly the ones located in western China that register less economic activity than coastal provinces (Lin 2010).

This scenario of a permanent flow of funds to produce more expressways, with low risk and high revenues in the short term, would suggest that this economic activity in China is a profit-making paradise for non-state domestic and foreign investors. Even if the marginal revenues were short, investors would be happy to join low-risk projects that financial and transportation policies will always support. An example of a successful developer is the Chongqing Road & Bridge Company Limited (CRBCL), which invests in projects in the Chongqing provincial-level city and made an average gross profit of 91% in 2011, surpassing those of real estate corporations (Wu 2012). However, government control over money, land and corporations also has a completely opposite scenario for investors: what the authorities can provide in China, they can also take back.

The LDC of a provincial government might be enthusiastically attracting investors for developing a project, but if the provincial policy shifts to another place or particular project, then all government institutions redirect resources. Transportation commissions can redirect subsidies to other LDCs to 'create' cash flows for new projects that otherwise would be highly risky. In the same way, the provincial financial bureaus can operate restructuring programme in collaboration with FCCs to absorb the debt of subsidiaries that operate non-performing projects (Koppenjan & Ensernik 2009). Moreover, provincial governments triangulate subsidies not only within the transportation infrastructure sector, but also combining other sectors like water management, electricity or waste management.

Communication and transportation related bureaus and LDCs structure different ways to manage the operation, development and maintenance of expressways, which shapes the cash flows and debt of each project (Chen 2010; Cheung & Chan 2011; Chan et al. 2011). Therefore, corporations in joint-venture or other kinds of partnership schemes with LDCs absorb the majority of the financial risk in producing expressways because they are outside the changing institutional configurations that shape the foundation of the process (Ke et al. 2010).

The participation of non-state investors in producing transportation infrastructure in other political economic contexts unfolds differently in terms of debt management and risk. It is the government that absorbs the risk and private corporations that appropriate profits, as it occurs in advanced capitalist economies, such as Canada (Sangler & Crawley 2009) and the United Kingdom (Flinders 2005) or in developing economies, such as Mexico (Rocha Chiu 2006). In the PRC, the relation between transfers of financial capital from the banking system and the institutional configuration of transportation bureaucracies and LDCs shape the spatio temporalities of the expressway production process. The reduced consumption of expressways in the form of low toll fees in relation to rising debt indicates that expressways are not circulating to reproduce the dynamics of consumption. Therefore, in economic terms, debt instruments for funding expressways production work more as transfers of financial capital than as loans or any other real contractual arrangement that implies bankruptcy in the event of a default. In other words, LDCs will never pay back debts and, on the other hand, banks will maintain transferring capital.

Provincial-level governments can capitalize LDCs by subsidies from taxation or land transfers to fund new projects, but it is the banking system that ultimately holds the control over time horizons for developing them. In this sense, it is useful for banks to package financial capital transfers as loans so they can manipulate the maturity or terms to facilitate further transfers throughout the system. This does not imply that LDCs are merely recipients of capital that they transform into expressways, but it certainly remarks on the decisive role of the central government, through its banks, as the main pivot in the production of expressways.

Part II

Chongqing provincial-level city

Chapter 4

Chongqing: urban transformation from the mountains to the oceans

In the interior of the Yangzi River basin, the linear topography of mountains and valleys incubates infernal heat waves and high humidity. Chongqing is known as 'the city of mountains' (山城 *shan cheng*), the city of mountains and rivers (山水之城 *shanshui zhi cheng*) and also as one of the three 'furnace cities' (三大火炉 *sanda huolu*) of China, along with Wuhan and Nanjing. While state investment has shaped large-scale infrastructure development and accelerated urban transformation, the mountainous landscape of the city prevails even in the contemporary central districts of the city. Skyscrapers stand in view of mountains of up to 2,230 meters and networks of transportation skirt them en route to connecting Chongqing to the nation. These conditions contribute to understanding the local outlook on Chongqing as 'the big city that leads the big villages' (大城市的力量带大农村去 *da chengshi liliang dai da nongcun qu*).

The first section of this chapter introduces the historical background of Chongqing from the Maoist era to the early 2000s. In this section I assess SOE investments and land conversion in the context of the land redistricting of the four historical administrative units of Sichuan province that form the core area of Chongqing province-level city. In the second section I discuss the process by which the provincial-level city government has accumulated capital from infrastructure development through its LDCs. In this assessment I define infrastructure development not only as the spatial outcome of converging flows of capital and land conversion, but also as an integral part of state-owned wealth creation or state accumulation.

Production, reterritorialization and the first expressway

Understanding the historical background of Chongqing, from the Maoist era to the early 2000s, is important because the central government has included Chongqing in several national-level policies and projects which influence the city's urban-economic transformation. The central government included Chongqing as part of the 'Third Front' (三线 *san xian*) in the Maoist era, and the Three Gorges Dam project and 'Open up the West' programme of the reform era. Where

previous studies of these national development projects focus on their political and economic conditions, and local environmental impacts, it is also important to regularly consider how the central government has changed the administrative territory to execute these policies and their infrastructure projects. Thus in this chapter I also explain the transformation of Chongqing through changes to the administrative divisions.

The Nationalist government of Republican-era China established Chongqing as the capital of China from 1937 to 1949. During these years, the Nationalists moved assets of the state-owned chemical and weaponry industries from the coastal area to the protected valleys of western China (Li 2010a; Kapp 1974). After the establishment of the People's Republic of China, in 1949, Mao Zedong ordered the construction of the 'Third Front' to protect state-owned assets from foreign invasion. Through this strategy, the central government invested in improving factories, which dated from the Nationalist era, and relocated industrial assets from Shanghai and Guangzhou to the eastern part of Sichuan, including to Chongqing (Naughton 1988; Zhou & Chen 2008). In this era the central government also developed two railways which connected Chongqing to Chengdu, capital of Sichuan, and to Xiangfan, a city in Hubei province (Chen 2011). The construction of the 'Third Front', as an economic strategy from 1964 to 1971, increased fixed capital formation in Chongqing. By 1974, production of machines and other kinds of tools of production constituted 90% of the GDP (Zhou & Chen 2008, p. 150; Chongqing Bureau of Statistics 2008).

In the 'Third Front' framework, Chongqing was a prefecture-level city (Zhou & Chen 2008). In the reform era, the central government made several major adjustments to the administrative division of Chongqing, ultimately establishing it as the fourth provincial-level city. These changes emerged in steps. In 1983, the central government merged Yongchuan prefecture into Chongqing prefecture-level city. The eight counties of Yongchuan prefecture were a vast rural region between the central urban districts of Chongqing and Chengdu, capital of Sichuan province. At the time, the urban centre of Yongchuan prefecture had little more than three square kilometers of developed land (CPPCCCHS 2011). The eight counties maintained their names and the administrative unit that lodged the former prefecture government became Yongchuan county after the merger.

Next, the central government granted Sichuan province direct control over the 2.27 times larger Chongqing prefecture-level city and in 1983 approved the first urban master plan for the city (Chongqing city urban master plan 重庆市城市总体规划 *Chongqing shi chengshi zongti guihua*) (Zhou & Chen 2008). This plan defined the main five districts of Chongqing (Yuzhong, Jiangbei, Shapingba, Jiulongbo and Nan'an) as the nucleus of economic development of the region. The Sichuan government located infrastructure investment in these districts including the first expressway of Chongqing.

Sichuan provincial government officially opened to traffic the first expressway in Chongqing – the first in western China – in 1994. This first expressway, a toll road, like most expressways, connected Chongqing to Chengdu through Shapingba district and Yongchuan county. It was 340.2 kilometers long, 98 kilometers longer than the only other road that connected Chengdu and the urban core of Chongqing (CPPCCCHS 2011, p. 36). The first expressway of Chongqing is shown in the Plates 4.1 and 4.2.

Plate 4.1 and 4.2. Entering Chongqing from Chengdu on the Chengdu-Chongqing Expressway (left). A toll post in Chengdu-Chongqing Expressway as it was seen in 2013 (right).
Photographs by the author

Development of the Three Gorges Dam

In early 1990s, the State Council formulated a general policy framework to develop the Yangzi River as an economic region from Shanghai to Chongqing: 'the head of the dragon in Shanghai, the tail of the dragon in Chongqing' (龙头在上海，龙尾在重庆 *longtou zai Shanghai, longyi zai Chongqing*). According to this strategy, Shanghai would be the testing area for SOEs' experimental policies and a maritime connection to the world economy. On the tail of the dragon, Chongqing would be a regional economy that would complement capital accumulation of the Shanghai-led Yangzi River delta region (Zhou & Chen 2008). In the context of this policy, the State Council formally approved the development of the Three Gorges Dam.

The Three Gorges Development Corporation, a central government LDC funded mostly by CDB, led the construction of this mammoth project and continues to operate it (Hong 2004; Salazar 2000) while the dam is in Hubei province, most of the water reservoir area is in Chongqing. In 1994, Jiang Zemin and Li Peng went separately to inspect initial phases of development of the Three Gorges Dam water reservoir (Yi 2012). The length of the water reservoir area in Chongqing is 660 kilometers though its total surface is 1,084 square kilometers (Li et al. 2013, p. 32; OECD 2007, p. 91).[10] However, the land area of all administrative units where the water reservoir goes through is 36,119.98 square kilometers (Chongqing Bureau of Statistics 2008).

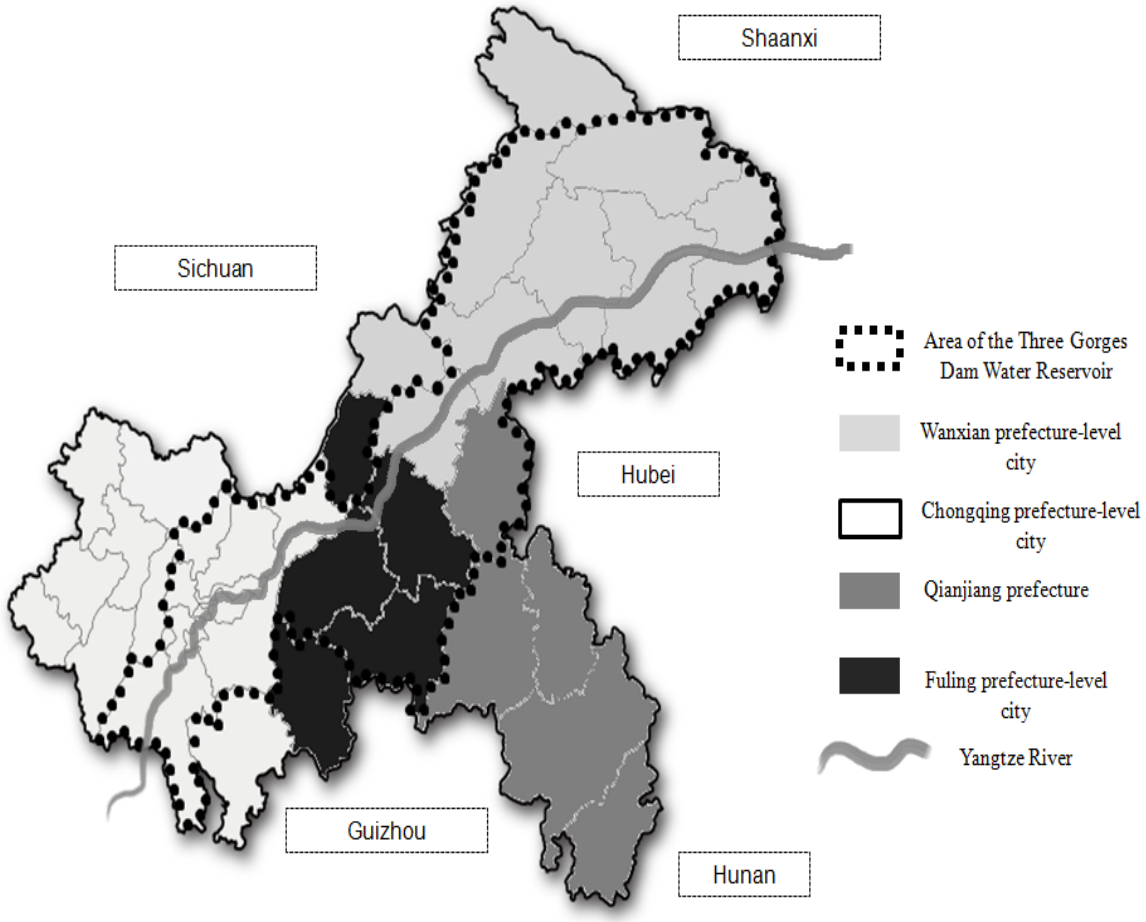
The central government conceived the southern rural area of Yongchuan county and the main five districts of Chongqing as crucial for managing demolition and reconstruction of infrastructure and relocation of people to make way for the reservoir. The reservoir covers area in three prefecture-level cities, Chongqing, Fuling and Wanxian, and one prefecture, Qianjiang. In 1992, the State Council approved rescaling Jiangjing county into a county-level city, adjacent to Yongchuan county. Two years later, two large counties south of the five main districts of Chongqing were turned into two districts: Ba'nan and Yubei. These two rounds of land redistricting in the context of the reservoir development produced the nine central districts area that would form the 'metropolitan advanced economic sphere' (都市发达经济圈 *dou shi fa da*

[10] The land area of the water reservoir also includes three administrative units of Hubei province: Zigui, Baoding and Yichang (OECD 2007).

jing ji quan). Ba'nan and Yubei land represent 87.6% of the total area of the nine central districts.

By 1994, the Chongqing prefectural government directly governed all administrative units in the area of the Three Gorges Dam reservoir, except for Jiangjin county-level city. However, most of the people who were displaced by demolition and infrastructure construction were located in two other prefecture-level cities of Sichuan, Fuling and Wanxian, which would become part of Chongqing (Jackson & Sleigh 2000; Chongqing Financial Bureau 2011a). Map 4.1 shows the administrative units of Sichuan province whose land was part of the reservoir by 1994.

Map 4.1. Three Gorges Dam Water Reservoir Area



Sources: Jackson & Sleigh, 2000 and Salazar 2000.

In the late 1990s the central government prepared transfers of financial capital to Chongqing for continuing and subsequent phases of development of the Three Gorges Dam, and to western provinces and autonomous regions for infrastructure development as part of the 'Open up the West' policy (Goodman 2004).[11] State-owned banks prepared a first round of loans worth RMB 600 billion for infrastructure development in the administrative units included in the 'Open up the West' policy (Shih 2004, p.438; Chen et al. 2004). In this context, the State Council officially announced on 18 June 1997 the separation of Chongqing prefecture-level city from the control of Sichuan province to create the fourth city at provincial level of China, after Beijing, Shanghai and Tianjin.

The creation of Chongqing provincial-level city

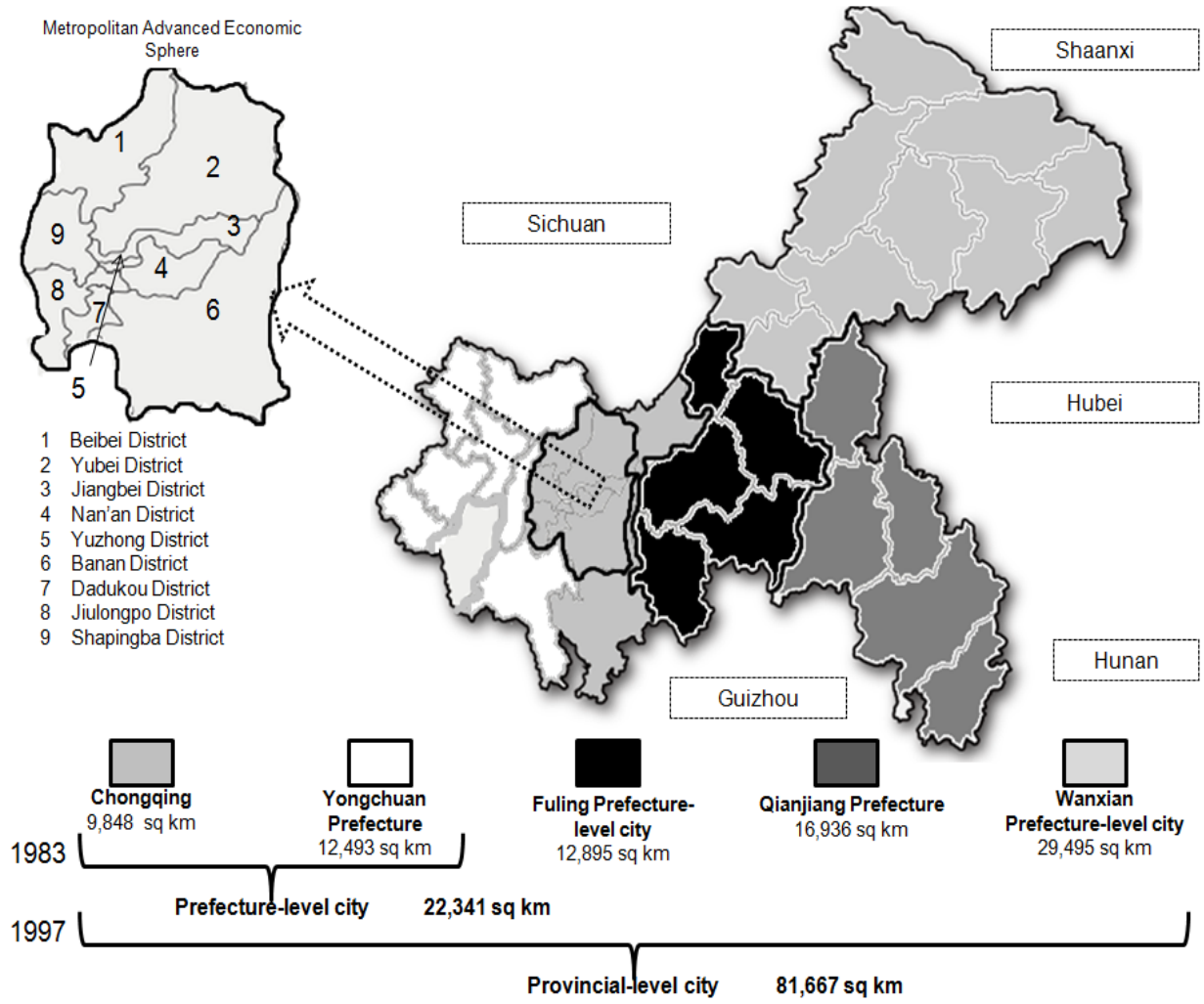
Since the beginning of the Maoist era, the central government has incrementally enlarged the administrative territory of Chongqing (Zhou & Chen 2008). The 1997 rescaling, from prefecture- to provincial-level city, was the most drastic in terms of land area. At this time the central government merged two prefecture-level cities, Fuling and Wanxian, and one prefecture, Qianjiang, into Chongqing prefecture-level city, to create the administrative territory over which the new Chongqing provincial government would govern. From 1996-1997, the territory of Chongqing increased from 22,341 square kilometers to 81,667 square kilometers, or 365.5% (Chongqing Bureau of Statistics 2008). The Map 4.2 shows the land area of each administrative unit that the central government combined to create Chongqing as the fourth and largest provincial level city in China. Chongqing is 4.9 times larger than Beijing, 12.9 times larger than Shanghai and seven times larger than Tianjin.

By establishing Chongqing at provincial level, the central authorities rescaled power relations in relation to three main developmental conditions: Chonqing's governing authority over the large state-owned industrial base inherited from the 'Third Front' era; the crucial role of Chongqing as recipient of capital transferred from central state-owned banks as part of the 'Open up the West'

[11] The 'Open up the West' policy includes 12 administrative units, among which there are five autonomous regions (Xinjiang, Tibet, Ningxia, Guangxi and Inner Mongolia), six provinces (Yunnan, Sichuan, Guizhou, Qinghai, Gansu and Shaanxi) and one provincial-level city (Chongqing). (Goodman 2004)

strategy; and the management of further phases of development of the Three Gorges Dam (cf. Hu 2007; Feng 1999; Goodman 2004; Hong 2002, 2004; Chen et al. 2004; Walcott 2007; Cui 2010).

Map 4.2. The fourth provincial-level city of China: from five administrative territories to one city



Sources: Chongqing Bureau of Statistics 2008

The territorialization of Chongqing at provincial level granted the city government economic and managerial independence, in relation to the Sichuan provincial government. Although in 1983 the central government separated the financial management of Chongqing, the city still had to contribute part of its revenues to be invested in other projects in Sichuan (Hong 1999). Therefore, the Chongqing government had capacity to manage its own revenues and expenditures; but it ultimately had to response to Sichuan provincial government demands. After

1997, the central government granted the city-province capacity to manage its own budget, establishing it as a territory at the same level as Sichuan.

Uneven and accelerated land commoditization

When the central government created Chongqing as provincial-level city, the economic gap between its urban core area and the other three administrative units under its jurisdiction was wide. Development was concentrated in areas of the nine central districts, and production was low elsewhere. In 1993, the central government categorized in 1993 several administrative units of the three jurisdictions that it merged into Chongqing as national poverty county-level units (国家级贫困县 *guojiaji pinkunxian*)[12] all counties or districts. Seven of the nine administrative units in former Wanxian city are national level poverty units. In former Fuling city, two out of the five counties are national level poverty counties, whereas all five administrative units of former Qianjiang prefecture (one district and four counties) are under this category (Zhou & Chen 2008).

The population gap was also wide between the nine central districts and the rest of Chongqing. In 1997, the population density of the nine central districts was 965 people per square kilometer. In contrast, in Wanxian, Fuling and Qianjiang it was 287, 291 and 167 per square kilometer respectively (Chongqing Bureau of Statistics 1999). Most people were in urban areas at the edge of Yangtzi River. The most urbanized area of Chongqing in 1997 was located within the nine central districts. The land area of these districts represents 6.74% of the total city's area and it lodged 34.7% of investments in infrastructure when the State Council created Chongqing at provincial level (Chongqing Bureau of Statistics 1998). Yuzhong district was the only territorial unit in Chongqing where land was completely urbanized by 1997. The new government settled its headquarters in Yuzhong, as Plate 4.4 shows. Yuzhong district also lodges other important cultural buildings for the city, such as the Three Gorges Museum which appears in Plate 4.3.

[12] There are 592 jurisdictions categorized by the central government as 'national level poverty'. This category includes counties, districts and county level cities. The three places that lodge the largest number of national level poverty jurisdictions are Tibet (74), Yunnan (73) and Guizhou (50); all in western China. The Sichuan – Chongqing region has 50 national level poverty administrative units. The 14 national level poverty units of Chongqing are: Chengkou county, Wuxi county, Wushan county, Fengjie county, Yunyang county, Kaixian county, Wanzhou district, Xiushan county, Qianjiang district, Youyang county, Pengshui county, Shizhu county, Wulong county and Fengdu county.

This museum shows the process of development of the Three Gorges Dam. In 1997 approximately 90% of the total city land area was rural, defined by mountains and rivers (OECD 2007, p. 8).

From left: Plate 4.3. The Three Gorges Museum, opened to the public in 2005, two years after the first generators of the TGD started to operate. Plate 4.4. The headquarters of Chongqing provincial level government. These two buildings are in front of each other. Both are located in the heart of Yuzhong district.
Photographs by the author.

The relocation of people, demolition and the development of infrastructure were phased in relation to the dam's development, which also determined further rounds of land redistricting and investment. Chongqing's government became responsible for resettling 84.79% of the people displaced, while the rest 15.21% were relocated in four counties of the adjacent Hubei province. The 57% of the people relocated in Chongqing have lived in urban areas (Jackson & Sleigh 2000, p. 229). During the first phase of the dam's development, the provincial city government relocated 846,478 people to counties of former Wanxian prefecture-level city (Hong 2004; Salazar 2000; Jackson & Sleigh 2000, p. 229).[13] In the process, Wanxian was approved by the State Council as a migrant development zone (万县移民开发区 *Wanxian yimin kaifaqu*) in 1997, and months later was renamed Wanzhou migrant development zone (万州移民开发区

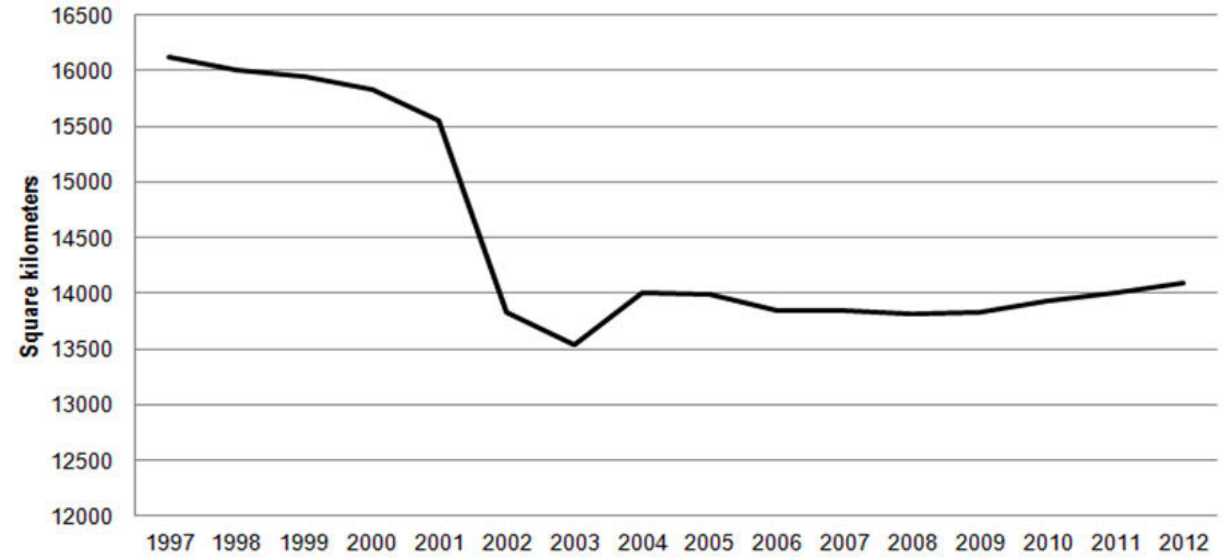
[13] Displaced population increased during subsequent stages of development of the dam. By 2005 were 943,500 people relocated. Increasing to approximately 1.3 million people in 2006 (Zhou & Chen 2008).

Wanzhou yimin kaifaqu).This development zone had under its direct management Wanzhou district and five counties that were partially inundated; meanwhile, thecityl government controlled the only two counties left outside the floded area in former Wanxian prefecture-level city. The migrant development zone obtained financial capital from the central government and had the same rank as the SEZs on the coast providing preferential policies to attract capital (Jackson & Sleigh 2000).

After the first phases of relocation concluded in 2000, the State Council announced the abolishment of Wanzhou migrant development zone and the provincial level authorities took control of its five counties. This change granted Chongqing direct administration of vast areas slated for land use conversion, flooding, demolitions and in which to develop new infrastructural projects. The city government converted cultivated land along the Yangtzi river banks to be floded. From 1997 to 2000 the decrease in cultivated land was low; however from 2000 to 2003 the Chongqing government converted approximately 13,500 square kilometers to make way for the reservoir. In 1998, 61.8% of cultivated land area lost in the city was within the dam flod area. In the next two years this increased to 73.6% and then to 80.7%. Figure 4.1 shows this data in detail by year.

The reservoir required the partial inundation of 34 towns and the totally demolition and submersion of 106 towns (Li et al. 2001). In the first stage of inundation, which ended in 2003, there was a budget of RMB 33.857 billion for relocating people and rebuilding towns. Of this budget, 95% was for infrastructure development, mainly roads, water, sewerage, telecommunications and electricity in urban areas (Jack & Sleigh 2000, p. 231). The per capital budget for infrastructure development in villages was RMB 903, but for towns was RMB 2,000 and for county seats was RMB 4,100 (Li et al. 2001, p.207). Most of the county and district governments in Chongqing created their own industrial park zones (工业园区 *gongye yuanqu*) during the land conversion years. From 2000 to 2003, they created 37 industrial parks in administrative units of Chongqing (HKTDC 2013). However, this process of accelerated land conversion shaped spatial transformation of different magnitudes in these administrative units.

Figure 4.1. Decrease of cultivated land in Chongqing



Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Cultivated land decrease in TGDWR as share of the total	61.8	73.6	80.7	60.4	66.6	38.2	69		73.7

Sources: Chongqing Bureau of Statistics, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007; Jackson & Sleigh 2000; Zhou et al. 2008; Li et al. 2013; CBLRH 2009, 2010, 2011, 2012, 2013.

Land conversion took place both in the large administrative units of northeast Chongqing and in the nine central districts. The impact of land conversion on spatial transformations was greater in those administrative units where the proportion of cultivated land in relation to total area was higher. This was the case of the nine central districts where cultivated land area was around 23% to 35%. After land conversions and the relocation of people in 2006, this fell to 15% to 24% of total land area (Chongqing Bureau of Statistics 2001, 2002, 2003, 2004, 2005, 2006, 2007). In northeast Chongqing, cultivated area was around 10% to 17% of total area. In 2007, this was just 5% to 16% (Chongqing Bureau of Statistics 2001, 2002, 2003, 2004, 2005, 2006, 2007). Hence,

relatively intensive land conversion contributed to significantly greater spatial transformation in the nine central districts than in the vast rural mountainous hinterland of northeast Chongqing.

Where in the nine central districts the provincial city government accelerated land commoditization for developing infrastructure, it began commoditizing land for agricultural production in northeast and southeast Chongqing. According to Figure 4.1, from 2009 to 2012 there were 267.22 square kilometers for agricultural production, most of which were of the northeast and southeast administrative units (CBLRH 2010, 2011, 2012). In contrast, land commoditization for industrial and real-estate development accelerated mostly in the nine central districts accounting in 2009 for 37.9% of the land converted and to which conveyancing fee were paid (CBLRH 2010). In the next three years, this share rose to 31.5%, 32.2% and 42.8% (CBLRH 2011, 2012, 2013).

LDCs of Chongqing: infrastructure development as strategic accumulation

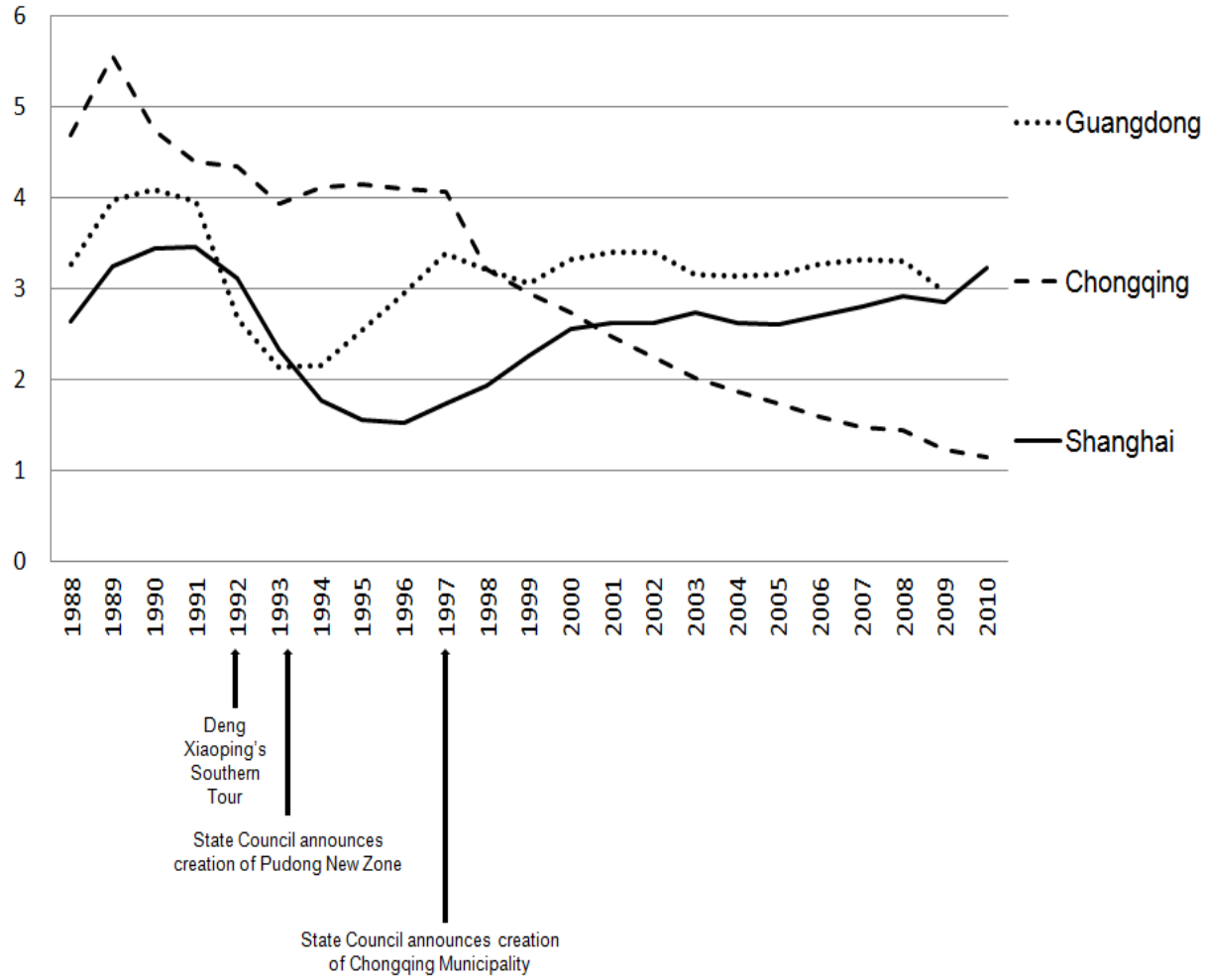
Investments in infrastructure development during the 2000s in the nine central districts would increase land value faster than in any other area of Chongqing. After land conversions in the early 2000s, and the first preferential loans from the CDB as part of the 'Open up the West' policy, the Chongqing government restructured LDCs to accelerate development of infrastructural projects, mainly in the nine central districts. The aim of this second section is to assess the ways in which the Chongqing government, through its LDCs, has created and accumulated capital through infrastructure development – the processes through which the Chongqing government has been the main engine of capital accumulation in the city.

Investments for infrastructure development have shaped accelerated economic development and spatial transformations in Chongqing. The central government has provided money capital in the form of transfers or preferential banking loans to the city's SOEs mainly for infrastructure development. After the central government created Chongqing at provincial level, the Sichuan provincial government cut financial transfers to the new provincial-level city. Howver the central government increased theirs. In 1996, the central government transferred RMB 3.37 billion to Chongqing government, but next year it surged to RMB 5.64 billion; accounting the 3.8% of the city's GDP that year (Chongqing Financial Bureau 2011a, p. 154-155).

The CDB has been the city's main source of money capital for infrastructure development, granting approximately 20% of the loans as part of the 'Open up the West' campaign. The CDB opened its Chongqing branch in 1999 and was by 2001 managing projects worth RMB 6.3 billion, a figure that by 2004 surged to RMB 28.7 billion ('China Development Bank map of Chongqing: the big eight corporations vs. platforms for credit' 2012; RGCDBPUC 2007). Reflecting this infusion of capital, the relation between rising fixed capital investment and the total amount of commodities and services produced in the provincial-level city has been narrowing throughout the years. Since 1997 the GDP-fixed capital ratio of Chongqing's economy has dropped drastically – economic growth in there depends on investments in fixed capital. In 1989 the GDP-fixed capital ratio was 5.7, and it gradually declined throughout the 1990s. In 1997 the ratio was 4.1 and by 2010 it declined to 1.2. Figure 4.2 shows the changing ratio of GDP to investment in Chongqing, compared with Guangdong and Shanghai. From 1997 to 2008, its average share of construction in total fixed capital formation was 65.9% (Chongqing Bureau of Statistics 2008). Hence, investment in machinery and other technologies of the production process is low in comparison with development of infrastructural projects, real estate and other infrastructure projects.

Infrastructure development funded by state-owned bank loans following central government policies is an economic trend that has occurred in other administrative units. In the early 1990s GDP-fixed capital ratio declined in Guangdong after Deng's Southern Tour; whereas an increase in fixed capital investment took place in Shanghai in 1988-1989, two years before the State Council announced the creation of Pudong New Area (PNA). In 1993 the GDP-fixed capital ratio of Guangdong declined from 3.9 in 1990 to 2.2 (Guangdong Bureau of Statistics 2010). The PNA was established in 1993, but two years later the GDP-fixed capital ratio of Shanghai was in decline. In 1992 it was 3.2, and it reached a historical low after the creation of PNA in 1993. In 1996 it was 1.6 (Shanghai Bureau of Statistics 2011).

Figure 4.2. Ratio of GDP to investment in fixed capital in Guangdong, Chongqing and Shanghai



Sources: Guangdong Bureau of Statistics 2010; Chongqing Bureau of Statistics 2011; Shanghai Bureau of Statistics 2011.

Despite similar waves of fixed-capital investment, economic activities in Chongqing, Shanghai and Guangdong developed differently in later years. Logistics, finance, real estate, accounting and other tertiary industries have been the main engine of development in Guangdong and Shanghai throughout the 2000s. In 1996 manufacture formed the 52.3% of the GDP of Shanghai and by 2011 the tertiary sector formed 57.88% of its GDP (Shanghai Bureau of Statistics 2011). In 1996 manufacture had a share of 50.1% of Guandong's but by 2009, industries of the tertiary sector contributed 83.5% to GDP formation (Guangdong Bureau of Statistics 2010, GSG 2013).

The Chongqing government, either through its LDCs or its infrastructure-related bureaus, has been the largest investor in fixed capital of the three cities. The value of infrastructural projects owned by Chongqing's LDCs has increased 1,490% from 2001 to 2011 (Huang 2011b, p. 581), from RMB 170 billion in 2001 to approximately RMB 1.7 trillion or 16.9% of the city's GDP in 2011(Chongqing Bureau of Statistics 2012; Cui 2010, p. 75). In other words, the main engine of capital accumulation in Chongqing throughout the 2000s has been state fixed capital development.

In the early 2000s, the Chongqing government restructured production process and the management of its state-owned assets. Since the early years of the reform era, Chongqing was an important pilot area of SOE reform. Zhao Ziyang, then Sichuan Party Secretary, launched a reform in Chongqing's state-owned factories to increased productivity in 1978. This reform granted managerial independence to SOEs and established a system of incentives to workers (Hong 1999). From the late 1990s to the early 2000s, the Chongqing province city government restructured its LDCs precisely by increasing their managerial margin, allowing them to access more capital for infrastructure development. First, the city government sold part of the state-owned assets inherited from the 'Third Front' era, (Chen 1998; Hong 2004), and small LDCs under the control of county and district governments (GOCMG 2011). The next step came in 2003, when it created Chongqing State Owned Assets Supervision and Administration Commission (重庆市国有资产监督管理委员 *Chongqing shi guoyou zichan jiandu guangli weiyuan* CSASAC), as a managerial governing institution and the main stakeholder of these LDCs. The corporations with the most valuable assets are the Bank of Chongqing, Chongqing Rural and Commercial Bank and Chongqing Expressway Development Corporation (CEDC), which is the city's expressways developer. Where the main assets of banks are loans, the bulk of CEDC's assets are expressways (GOCMG 2003, 2004, 2011).

The architect of the corporate reform of Chongqing LDCs was Huang Qifan, at that time Vice Mayor and Deputy Party Secretary of the city. Huang arrived in Chongqing in 2001, bringing six years of experience in different bureaus of the Shanghai government. Huang's career in Shanghai started in the early 1990s, in Pudong district, when he was the Vice-Director of the Office of Economic Development of Pudong District and then the Vice-Director of the Pudong District

Administrative Committee. He was promoted to the Shanghai government, first to be the Director of the Policy Research Office of the Shanghai CCP Office and later as Deputy-Secretary General of the Shanghai government and the Director of the Economic City Committee (Huang Qifan n.d.). On moving to Chongqing Huang imported Shanghai's model of SOEs management that combined land leasing and finance to accelerate capital accumulation (Walcott 2007; Pan 2006).

Immediately after creating the CSASAC in 2003 as the new framework for managing state-owned assets, the Chongqing government formed a group of eight corporations specialized in different infrastructural projects: the big eight LDCs (eight big investors, 八大投 *ba da tou*). Most of their assets are in infrastructural projects, especially expressways, bridges, hydropower plants and railways. Their total assets at the end of 2006 reached RMB 191.9 billion, which accounted for 42.5% of all state-owned assets in the city (GOCMG 2007, p. 96). The big eight LDCs of Chongqing are listed in Figure 4.3. The largest in terms of asset value and market capitalization is the Chongqing Expressways Development Corporation (CPPCCCHS 2011; Khan 2007). The provincial government also restructured three bureaus and commissions to provide the LDCs with project technical advice: the CCB, Chongqing Bureau of Water Resource (CBWR), and Chongqing Construction Bureau (CHCB). It created the CCB as the authority responsible for transportation infrastructure development by merging the Bureau of Public Facilities, the Economic Commission for Communications, the Bureau of Ports Management and the Bureau of Communications (Zhou & Chen 2008).

Figure 4.3. The big eight land developer corporations of Chongqing

Land developer corporations	Main projects and investments
Chongqing Expressway Development Company (CEDC)	Construction, operation and maintenance of expressways.
Chongqing Transportation and Tour Investment Company (CTTIC)	Bridges and facilities at tourist attractions
Chongqing Urban Construction Investment Corporation (CUCIC)	Roads, bridges and other urban facilities, like convention centres and exhibition galleries.
Chongqing Energy Investment Corporation (CEIC)	Projects related to electricity, gas and coal.
Chongqing Real Estate Group (CREG)	Real estate, land speculation and insurance.
Chongqing Development Investment Corporation (CDIC)	Railways and garbage-disposal facilities.
Chongqing Water Works Controlling Group (CWWCG)	Water supply systems, drainage and waste-water treatment.
Chongqing Water Resources Investment Company (CWRIC)	Water supply and conservancy projects and small scale hydropower plants.

Sources: Zhou & Chen 2008 and Khan 2007

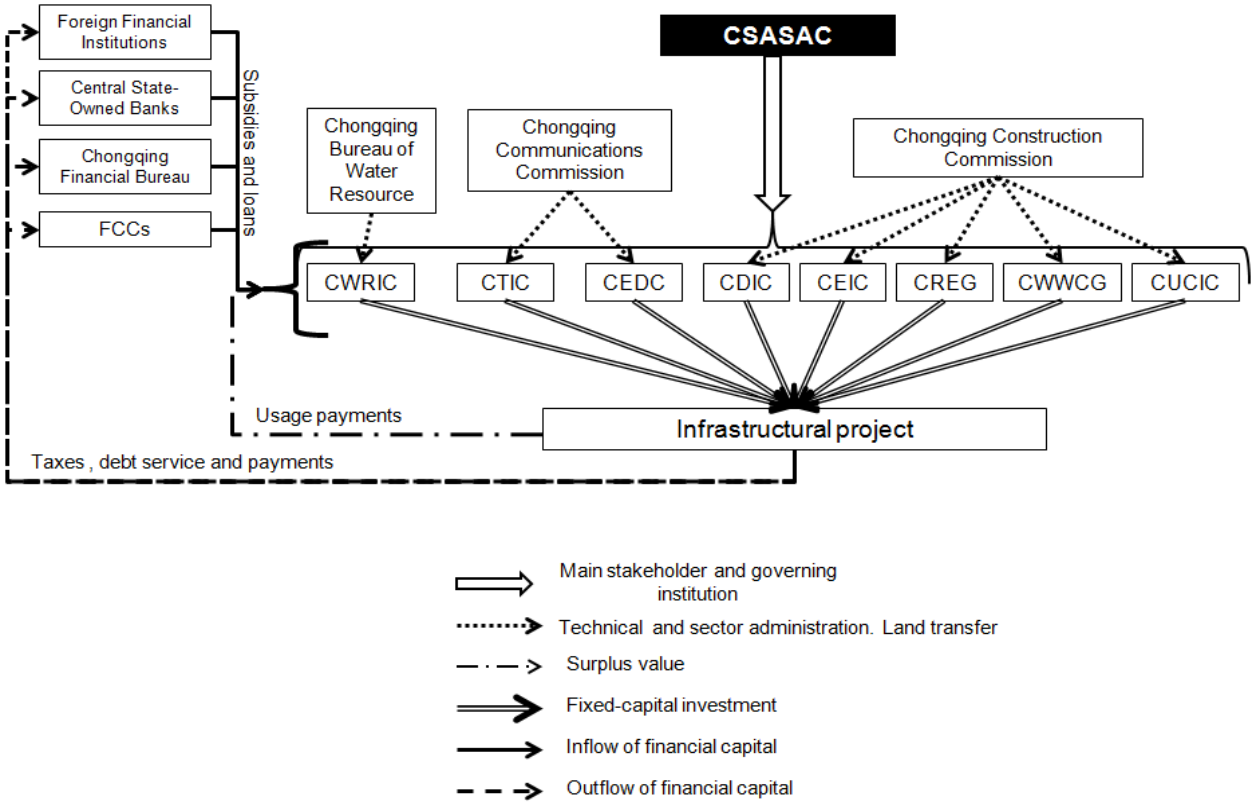
The administration of the eight big LDCs has two basic principles. First, the corporations cannot back up each other's loans or any other kind of debt instrument, and second, they must maintain cash reserves to manage risk (Khan 2007). For these reasons, the Chongqing government restructured Yufu Securities to function as their financial arm. Yufu Securities is an FCC that has been engaged in infrastructure development since late 1990s. In a joint-venture with another city bank, Sanxia Credit Corporation, it formed the largest credit guarantee corporation for infrastructure development in China. This corporation was a financial trust that guaranteed the banking loans leveraged to development the Three Gorges Dam (CPPCCCHS 2011). Then the CDB provides preferential loans to Yufu Securities, which can either directly transfer them to any of the big eight LDCs or exchange it for debt rights in other state-owned banks (RGCDBPUC 2007). Yufu Securities can buy debt from the eight big corporations to relieve any threat of bankruptcy derived from the low performance of assets. In the case of acquiring debt rights, Yufu Securities can transfer them as financial assets to any other land developer in

exchange of land-use rights, which of then gives back to the CDB as payment for the loans received in first instance. This process carves out multiple channels between state-owned banks and infrastructure development corporations in which to turn land into financial capital and vice versa (RGCDBPUC 2007; CPPCCCHS 2011). The dynamic of land-financial capital circulation structured by the city's financial corporations, such as Yufu Securities, and the big eight LDCs, is the core of the experience that Huang Qifan imported from Shanghai to Chongqing (Pan 2006).

The Chongqing government transfers land to the big eight LDCs through the three infrastructure related institutions, the CCB, the CBWR and the CHCB. The LDCs can use land either for developing infrastructure, or list it on the lease market as part of their inventory to speculate in relation to further value increase. Furthermore, the provincial city government also provides subsidies and cash transfers to the land developers through the Chongqing Financial Bureau (CFB) (Kai 2011). Hence, any change in the fiscal system is crucial in relation to revenues for funding or expenditures in subsidizing further projects. Additionally, the land developers can seek funding from foreign financial institutions, i.e. banks, international organizations such as the World Bank or foreign corporations as joint-ventures.

The LDCs obtain cash revenues from each project in toll fees, monthly water usage payments, and so on. This revenue is surplus value appropriated by each LDC for three main purposes: fulfilment of liabilities with creditors, tax payment to the Chongqing government, or further investment in new projects. Therefore, the use of any infrastrucutre in the city also reproduces the circulation of money and fixed capital that ultimately creates state-owned wealth. Figure 4.4 presents the ways in which the different bureaus of the Chongqing government, the LDCs, banks and users of infrastructure reproduce the circulation of money and fixed capital.

Figure 4.4. The flows of capital of the big eight LDCs



Sources: Chongqing Financial Bureau 2011a; CPPCCCHS 2011; Khan 2007 and Kai 2011

In the case of the CEDC in Figure 4.4, as one of the big eight corporations under management of the CSASAC, it receives land from the provincial city government through the CCB. Complementarily, CEDC obtains money capital (inflow of capital) for developing expressways from state banks, the Chongqing financial bureau, FCCs (such as Yufu Securities) and even from foreign financial institutions. Then, the CEDC develops an expressway from where it obtains surplus value in toll fees, redirecting it either to pay taxes or service debt (outflow of capital) or to fund new projects.

LDCs operate in permanent debt. By the end of 2012, LDCs and other SOEs in Chongqing accumulated approximately RMB 1 trillion in debt (Orlik 2012), or 87% of the city's GDP in the same year (Chongqing Bureau of Statistics 2012). Part of the capitalization provided by the state-owned banks to LDCs is short and mid-term banking loans; however, the largest part is long-

term loans. LDCs can pay short-term debt service from their profits or from government subsidies; but it is unlikely that they can cover their long-term debt. At this point the interest rate governed banking system is crucial to facilitate permanent accumulation of fixed capital through high debt leverage free of default risks.

The Chongqing government reformed the fiscal system in 2004 to increase its capacity to subsidize additional projects by the big eight LDCs. This tax reform divided the city into two territorial tax regimes: the nine central districts, and the rest of Chongqing. In the first, the provincial city government claimed 60% of the revenues generated from seven of the 13 categories of tax, leaving the balance for the nine district authorities. These categories included taxes on real estate, construction industry and fixed industrial assets (Chongqing Financial Bureau 2011a, p. 150-151). In the rest of Chongqing, the provincial city government allowed 10 districts and all counties to retain 100% of tax revenues in nine of the 13 categories of tax, including real estate, construction and fixed assets (Chongqing Financial Bureau 2011a, p. 150-151).

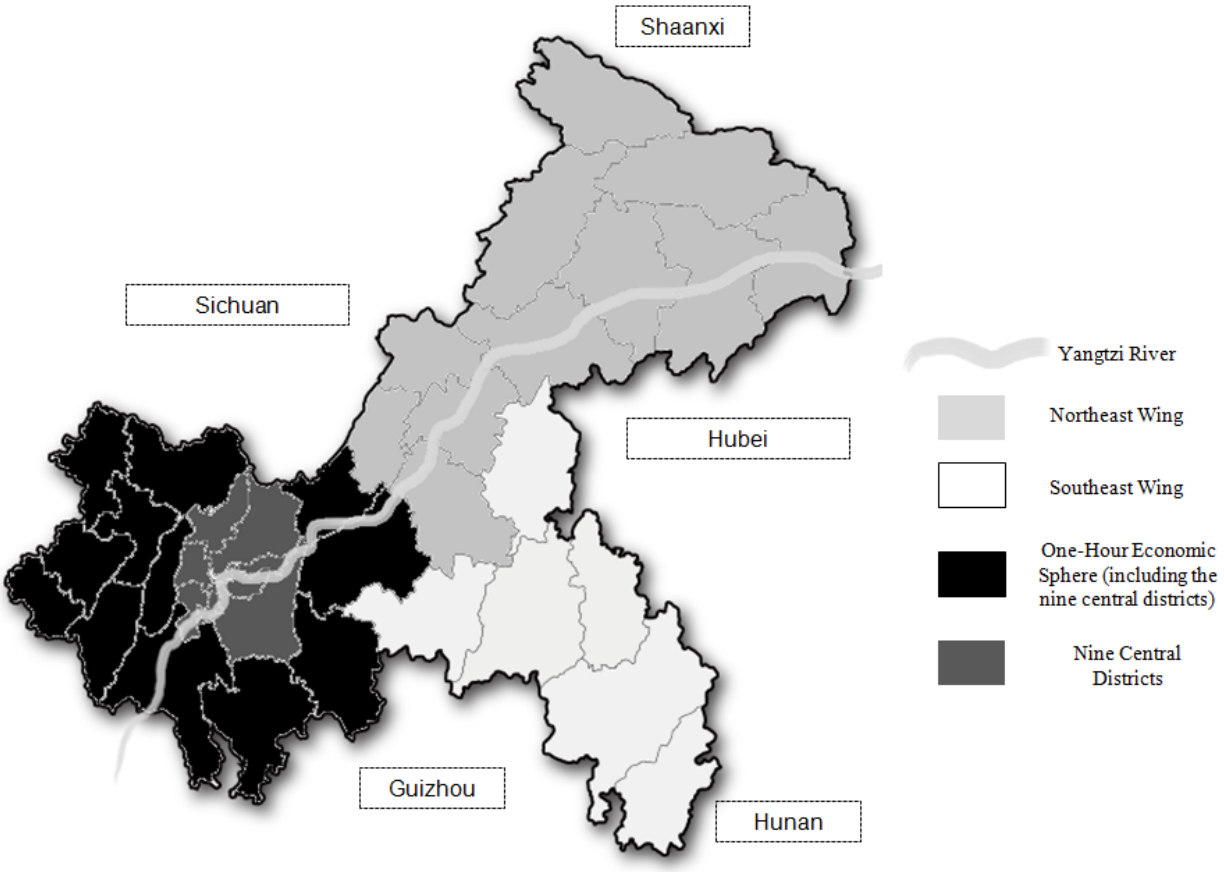
In 2005, 52.1% of total investment in fixed capital and 82.8% of the investment in real estate development in Chongqing was concentrated in the nine central districts (Chongqing Bureau of Statistics 2008). By 2006, most of Chongqing government fiscal revenues were generated mainly from Yubei and Fuling districts. Those from Yubei were approximately 15 times more than Wuxi's, a county near the boundary with Hubei and northeast Chongqing's poorest (Yi 2012). In 2006, Yubei district had a per capita GDP of RMB 26,900; or 6.11 times more than Wuxi. Other counties in northeastern Chongqing had similar GDP per capita, such as Wushan (RMB 5,500), Kaixian (RMB 7,900) and Fengdu (RMB 7,500) (Yi 2012, p. 138). After almost a decade since Chongqing's creation, the economic city policies conceived development as production of fixed capital. This reproduced the uneven development between the administrative units when they were under jurisdiction of Sichuan province.

Reterritorialization for infrastructure development

In 2006, two years after the fiscal reform, the provincial city government designed a new strategy as a general framework for localizing further investments in the most developed region

of Chongqing: 'one ring, two wings' (一圈两翼 *yiquan liangyi*). In other words, this strategy constituted a further step in urbanizing areas of the nine central districts and therefore reproducing uneven development. Through it the Chongqing government divided the city into three parts. The 'ring' circumscribed the nine central districts and 14 other administrative units, including the only four county-level cities in the city. In terms of transportation infrastructure planning and development, the CCB conceived the 'one ring' region as the 'one hour economic sphere' (一小时经济圈 *yi xiaoshi jingjiquan*) in which the transport time between two extreme points of the sphere would be no more than one hour. The two wings were the remaining area in the northeast and southeast of the one-hour economic sphere. The Map 4.3 shows the expansion of the main governing urban area beyond the six central districts under the new territorial organization of Chongqing.

Map 4.3. 'One Ring, Two Wings' spatial strategy for economic development in Chongqing



Source: OECD 2007

The one-hour economic sphere draws a circle around the area of the former Chongqing prefecture-level city plus two administrative units of former Fuling prefecture-level city. The northeast and southeast wings are mostly the areas of former Wanxian prefecture-level city and Qianjiang prefecture respectively. In sum, after land conversion and several rounds of land redistricting carried out for the development of the Three Gorges Dam, the Chongqing government adjusted the territorial administration based in part on the previous territorial arrangements under Sichuan administration. The area of the one-hour economic sphere or the 'one ring' is mostly the area of former Chongqing prefecture-level city. All the administrative

units of former Yongchuan prefecture are also part of the one-hour economic sphere. On the other hand, all administrative units of the former Wanxian prefecture-level city and the former Qianjiang prefecture are located in the northeast and southeast wings respectively. The administrative units of former the Fuling prefecture-level city are divided between the one-hour economic sphere and the two wings. As part of the 'one ring, two wings' strategy, the provincial city government localized development in one main urban area and six secondary urban areas. The main urban area of Chongqing was formed by the nine central districts. Five of the six secondary urban areas were located in five administrative units within the 'one ring': Fuling and Changshou districts, and Jiangjin, Hechuan and Yongchuan county-level cities. The provincial city government located only one secondary urban area outside the 'one ring' land area in Wanzhou district, in northeast Chongqing (Huang et al. 2010).

By 2006, the provincial city government extended its core of centralized territorial governance beyond the nine central districts to encompass four more districts (Washeng, Shuangqiao, Fuling and Changshou), four county-level cities (Nanchuan, Hechuan, Jiangjin and Yongchuan) and six counties (Dazu, Rongchang, Bishan, Tongliang, Tongnan and Qijiang). The land of the 'ring' or the one-hour economic sphere is 39.9% of all city land, but the economic activity within it represents 78.10% of Chongqing's GDP and 77.70% of investment in fixed capital (Chongqing Bureau of Statistics 2007). Figure 4.5 compares land area, capital accumulation and circulation of the three main governing territories of Chongqing.

Figure 4.5. One ring-two wings in 2006

Variable	One Ring	Northeast Wing	Southeast Wing
Spatial economy			
Land area (as % of the total area)	39.30%	45%	15.70%
Administrative units	13 districts, 4 county-level cities and 6 counties	1 district and 10 counties	1 district and 5 counties
GDP (as % of the province-level city GDP)	78.10%	16.60%	5.30%
Fixed capital investment (as % of the total)	77.70%	15.11%	7.19%
Roads	39,964 km	47,248 km	13,087 km
Strategies of Development			
Urbanization	Accelerated spatial transformation	Low spatial transformation	
Orientation	Connected to global capital	Local economy	
Economic activities	Finance, real estate, logistics and manufacture	Manufacture and tourism	
Transportation	International hub of western China	Local hub	

Sources: Huang et. al. 2010; Pei 2008 and OECD 2007

The Chongqing government operationalized the 'one ring, two wings' spatial strategy of development by formulating territorial administrative changes in the jurisdictions that it targeted as important spaces for capital accumulation. In October 2006, the State Council approved a crucial decision that strengthened governing powers of the province-level city government in the administrative units within the 'one hour economic sphere' area: the extension of governing authority over four county-level cities (Yongchuan, Hechuan, Nanchuan and Jiangjin) by turning them into districts. This concluded the administrative territorialization and eliminated county-

level city governments within a provincial-level city or 'city in a city' (市中市 *shizhongshi*). Consequently by 2006 there were just districts and counties in Chongqing.

The rounds of land redistricting that the State Council has approved in Chongqing has had since created into districts as spaces of high capital accumulation. This, consequently, has allowed district governments and the province-level city government itself to increase taxation and other revenue. Immediately after creating Chongqing, the State Council approved land redistricting of the three administrative units that lodged the former prefectural government seats of Qianjiang prefecture, Wanxian city and Fuling city creating three districts. It merged Wanxian's three districts to create one new district, Wanxian district, only months later renaming it Wanzhou district. At that time, this new district concentrated 28.3% of the GDP and 40% of the investments in fixed capital of the former Wanxian prefecture-level city. Finally, the State Council merged the former Fuling prefecture-level city's two districts into one: Fuling district. The economy of this district was 41.3% of the GDP and 49.7% of fixed capital investments of former Fuling city (Chongqing Bureau of Statistics 1999).

Urban and rural integration and creation of districts

One year after rescaling four county-level cities into districts within the one-hour economic sphere, the State Council launched the 'urban and rural integration' policy with Chengdu and Chongqing as pilot areas. It increased the money capital transfers to Chongqing government under a budgetary category denominated 'transfers and subsidies' (专款及补助 *zhuan kuan ji buzhu*) (Chongqing Financial Bureau 2011a). The inclusion of Chongqing in the 'urban and rural integration' policy and the abolishment of the four county-level cities within the one-hour economic sphere increased the revenue streams of the city government, allowing its infrastructure-related bureaus to transfer more capital to LDCs to fund new projects. With more cental government's money and budgetary revenue, Chongqing's infrastructural landscape became more uneven, focusing more projects within the one-hour economic sphere.

Central government capital increased under the category of 'transfers and subsidies' in the context of the 'urban and rural integration' policy. At the end of 2006, it had transferred RMB

27.48 billion to the province-level city government, and by the end of 2007 this amount surged to RMB 42.39 billion (Chongqing Financial Bureau 2008). The rescalig of four county-level cities into districts also increased revenue. Revenue collected rose from two budgetary categories: the 'general budgetary revenue' (一般预算收入 *yiban yusuan shouru*) and the 'budgetary funding' (基金预算收入 *jijin yusuan shouru*). The first is formed by 13 categories of taxes; most of these revenues coming from the tax to added-value production in manufacturing and corporate taxes. The second is formed by taxes in five economic activities: manufacture, communications, commerce, education and culture and agriculture. Moreover, additional fees from land transactions and administrative allocations of capital from the central government also constitute these funds (Chongqing Financial Bureau 2011a). The 'budgetary funding' taxes form an income stream that the provincial city government started collecting after the central government established Chongqing as province in 1997 (Chongqing Financial Bureau 2011a).

At the beginning of 2006, when there were still four county-level cities, all administrative units in Chongqing collected RMB 25.68 billion from sources of the general budgetary revenue (Chongqing Financial Bureau 2011a). By the end of 2007, after the central government rescaled the four-county level cities into districts, taxes collected from general budgetary revenues reached RMB 44.27 billion (Chongqing Financial Bureau 2008), an increase of 1.7 times. This growth was even larger than the one registered in 1997, when the general budgetary revenues of the new Chongqing city government increased 1.4 times (Chongqing Financial Bureau 2011a). The amount of revenue that all administrative units collected through 'budgetary funding' increased less than the 'general budgetary revenues' in absolute terms. In 2006, all administrative units in the city collected RMB 18.97 billion (Chongqing Financial Bureau 2011a) from sources of 'budgetary funding'. By the end of 2007, the amount of capital collected from this stream increased to RMB 34.59 billion (Chongqing Financial Bureau 2008). Hence, even though 'budgetary funding' increased less than the general revenues in absolute terms, in relative terms it rose 182.34%. The combined capital collected in taxes and financial transfers from 'transfers and subsidies', 'general budgetary revenue' and 'budgetary funding' of all Chongqing administrative units, including the provincial government itself, increased from 2006 to 2007, from RMB 79.53 billion to RMB 121.250 billion (Chongqing Financial Bureau 2011a,

2008, 2009a). Each of the three streams contributed in different proportions to increasing revenue collected throughout Chongqing.

The State Council's next round of land redistricting created two districts, Qijiang and Dazu, and two high-tech economic development areas, Shuangqiao and Wansheng, in the one-hour economic sphere. The central government established former Qijiang and Dazu counties as districts in 2011, both having a large area and population, but low GDP. Qijiang county had a land area of 2,182 square kilometers and GDP of RMB 17 billion, whereas Dazu county's area was 1,390 square kilometers and its GDP was RMB 10.18 billion. The central government established former Shuangqiao and Wansheng districts as high-tech economic development areas. Both districts had a small land area but a buoyant economy at the time of their rescaling. Shuangqiao district had a land area of just 43 square kilometers and GDP of RMB 3 billion, and Wansheng district was 566 square kilometers with a GDP of RMB 4.927 billion (Chongqing Bureau of Statistics 2010). With the new Qijiang and Dazu districts, only four of the 21 administrative units inside the one-hour economic sphere were counties. These counties have the lowest GDP, the lowest investment in fixed capital and have registered the lowest fiscal revenues of all administrative units within the one-hour economic sphere (Chongqing Bureau of Statistics 2010).

The creation of Qijiang and Dazu accelerated the annual increase in revenue collection of all administrative units in Chongqing. The combined revenue of all administrative units in Chongqing, including the province-level government, from general budgetary sources and budgetary funding before Qijiang and Dazu districts was RMB 337.47 billion. In 2011, it surged to RMB 475 billion; an increase of RMB 137.3 billion (Chongqing Financial Bureau 2011b, 2012) and 29% larger than that from 2009 to 2010 (Chongqing Financial Bureau 2009a).

Increasing revenue collected derived from changes in territorialization of power relations enlarged the provincial budget and consequently the possibility of increased subsidies and transfers to LDCs for accelerating fixed-capital development. The LDCs and the three infrastructure-related bureaus enhanced Chongqing's financial capabilities and developed major transport infrastructural projects since 2006. The majority of these projects are within the one-hour economic sphere, accentuating uneven geographical concentration of fixed-capital development. In the case of railway transportation, LDCs and the CCB developed four lines of

light rail (轻轨 *qing gui*) from 2006 to 2012. These lines combined are 196.6 kilometers long and connect the nine central districts. The Chongqing Railway Station, located in Yubei district, connects the city to the national railway system (CPPCCCHS 2011).

The Chongqing government developed Jiangbei Airport, in Yubei district, in the late 1990s. In 2006, LDCs invested in improving its facilities to turn it into an international airport. The new Jiangbei International Airport can move 4.3 times more people than in 1997 (Zhou & Chen 2008, p. 340) but is still behind in passenger numbers and cargo transportation than the airports of the other cities at province level. It had just 21% of the freight capability of the Beijing Capital International Airport and 40% of the Pudong International Airport of Shanghai (Yi 2012, p. 147).

LDCs have significantly improved port infrastructure in Chongqing. In 1997, its three main ports in Jiangbei, Fuling and Wanzhou districts could move 337,000 containers; by 2004 this capacity increased approximately 6.7 times (Zhou & Chen 2008, p. 371; Jackson & Sleigh 2000). The Chongqing ports are part of the logistics in the Yangtzi River region, along with that of Wuhan, in Hubei province, and Shanghai's. In 2007, work on Chongqing's Jiangbei district port was finished making it the largest in western China. Though its freight capacity was 64,340 tons in 2007, this was just 20.8% of Tianjin's port and 11.5% of Shanghai's; which in 2013 was the largest in the world (Yi 2012, p. 148; World Shipping Council 2013).

The CCB opened its second and third expressways in 2000, one a segment of the first city ring road and the other connected Changshou county to the nine central districts (Pei 2008; 'The other two segments of the first city ring road were opened to public' 2001). The first city ring road crosses seven of the nine central districts; missing Beibei, at the north of the metropolitan advanced economic sphere, and Yuzhong, in the heart of the city ring. The CCB opened a road to connect Changshou county to Fuling district in 2000 and the following year the State Council rescaled Changshou county into a district under the direct control of the Chongqing government.

The CEDC has developed six major expressways with a total length of 2,000 kilometers from 2001 to 2010. The MOC formally approved the National Expressway Network plan in 2004; making all expressways developed by LDCs of subnational governments part of a national transportation plan. In the case of Chongqing, the six national-level expressways whose segments were developed by CEDC are: G50 Chongqing-Shanghai Expressway (沪渝高速 *huyu*

gaosu), G65 Inner Mongolia-Guangdong Expressway (包茂高速 *baomao gaosu*), G75 Gansu-Hainan Expressway (兰海高速 *lanhai gaosu*), G42 Chengdu-Shanghai Expressway (沪蓉高速 *hurong gaosu*), G93 Chongqing-Chengdu Expressway (成渝高速 *chengyu gaosu*) and G85 Chongqing-Kunming Expressway (渝昆高速 *yukun gaosu*) (CEDC 2012). The MOC incorporated the Chengdu-Chongqing expressway that opened in 1994 as part of the G93 expressway.

Chongqing has two city ring roads. The MOC included the segments of the inner city ring that the provincial city government opened in early the 2000s as part of three expressways: G50, G65 and G75. Therefore, the inner city ring road is formed by the intersection of segments of these three expressways. The CCB developed the second city ring as the G5001 expressway or 'Chongqing ring road expressway' (重庆绕城高速公路 *Chongqing raocheng gaosu gonglu*). It is the only expressway of the network whose length is entirely within Chongqing administrative boundaries. G5001 goes through eight of the nine central districts. There are five expressways that connect Chengdu to Chongqing: G75, G85, the two segments of G93 and the only actual direct Chengdu-Chongqing expressway that connects Yuzhong district to Chengdu metropolitan area. The nine central districts of Chongqing are the only urban region in China where six national expressways intersect. Plate 4.5 shows one of the intersections of G5001 and G65, as well as the location of G93, G65 and G50 in relation to the second city ring road. The segments of these national expressways intersect in the administrative units within the one-hour economic sphere.

Plate 4.5. Signs over the G93 expressway that highlight the intersection of five national-level expressways in Chongqing. Photograph by the author

The Yuxinou Intercontinental Railway (渝新欧国际铁路 *yuxinou guoji tielu*) is another transportation infrastructure project within Chongqing's nine central districts. The CRC, a central LDC, is the main developer of this project which goes through one province-level city, two provinces and one autonomous region of China.[14] The Yuxinou railway started operations in 2011. It starts in Shapingba district in Chongqing and finishes in Duisburg, Germany. Along the way it connects Chongqing to three main cities of western China: Xi'an in Shaanxi province, Lanzhou in Gansu province, and Urumqi in Xinjiang. The Yuxinou railway crosses Central Asia through Kazakhstan then goes through Russia, Belarus and Poland before finally arriving in Germany. Products reach Europe 20 days earlier by the Yuxinou railway than if they left a port on the coastal region and went through the Malacca Strait (Yi 2012).

Jiangbei International Airport, Chongqing inland port, Yuouxin railway and the two city rings that ultimately connect the six national expressways segments are in the area of the nine central districts. The spatial relations of these projects connect people and commodities in the nine central districts and the rest of the one hour economic sphere to other economic regions of China and ultimately to the world economy. This system of overlapping infrastructural elements

[14] In March 2013, the State Council abolished the National Bureau of Railways and created the China Railway Corporation. This central SOE controls RMB 4.6 trillion in assets.

bypasses 60.7% of Chongqing's land area, in other words, the administrative units of the 'two wings'. Thus, the nine central districts are connected to other major spaces of capital accumulation in China and the world economy, but 'non-valued places' (Graham & Marvin 2001) in the province-level city are bypassed.

Overlapping infrastructure projects in the administrative units of the 'one hour economic sphere' facilitates state capital accumulation from other industries, such as the automobile industry. The origins of the automobile industry in Chongqing are in the 'Third Front' during the Maoist era. Some of the factories that the central government relocated to Chongqing produced military vehicles and ammunition until the first years of reform. These factories restructured their production during the 1980s relying on their accumulated industrial expertise and machinery. Such was the case of Chongqing Chang'an Automobile Company Limited (Chang'an), which started to produce automobiles in 1984 (Chen 1998). Chang'an is the leading automaker in Chongqing.[15] This SOE, whose major stockholder is the central SOE China Weaponry Equipment Group, currently generates the highest revenue among the SOEs and registers the highest market capitalization among all industries in Chongqing (Chen 1998; CEC & CEDA 2011). In 2009 Chang'an became the third largest manufacturer of automobiles in China, after Shanghai Automobile Industry Corporation (SAIC), based in Shanghai, and FAW Group Corporation, based in Changchun, Jilin province (Li 2009).[16]

The economic importance of the state-owned automobile industry in Chongqing is reflected in the profiles of the former Party secretaries in the city. Three previously served as top-rank bureaucrats in other cities that lodge important state automobile corporations. Former Chongqing Party secretaries Wang Yang (2002-2005) and Zhang Dejiang (March, 2012-November 2012) held the same position in Guangdong, where Guangzhou Automobile Industry Group is based. Current Chongqing Party secretary, Sun Zhengcai, served as Party secretary of Jilin, industrial

[15] There are more companies in the automobile industry or its related sectors in Chongqing. Lifan is another automobile maker, though its main production still focuses on motorcycles and microvans.

[16] The automobile industry was one of the main industries that received FDI in Chongqing. Besides the advantages in terms of costs of production that transportation infrastructure provide in Chongqing, foreign capital has moved out from coastal provinces to the interior because of increasing labor costs (Global Sources 2012). Chongqing is attracting as much investment as Shanghai. In 1998, FDI was 1.4% of the city's GDP. In 2003 FDI actually decreased to 1.1% of GDP. From 2007 inflows of foreign investment have increased exponentially. Approximately 63% of foreign investments in Chongqing are in fixed-capital development (Han & Wang 2002; Xie & Ping 2011, p. 25; Chongqing Bureau of Statistics 2008).

base of FAW Corporation. Huang Qifan, mayor of Chongqing, deputy-Party secretary and the architect behind the 2003 SOEs reform, has been serving in Chongqing for over 10 years. His early career started in Shanghai, production center of SAIC.

Chang'an has factories that operate through joint-ventures with two world leading automakers: Ford from the United States and Suzuki from Japan ('Chang'an Suzuki to invest US$825m to construct second factory in Chongqing' 2011).[17] The Chang'an-Ford joint-venture factories located in Yubei district have been the main non-SOE source of tax revenue for the province-level city government (Chongqing Financial Bureau 2011a). Other transnational companies that have arrived to invest in Chongqing are Foxconn from Taiwan, Hewlett-Packard and Kohler Engines from the United States, Isuzu from Japan and Maersk from Denmark. These companies have settled or plan to settle most of their Chongqing factories in the space between the first and second city ring roads, in Jiangbei, Yubei, Nan'an, Ba'nan and Jiulongpo districts.

In the context of increasing flows of FDI and accelerated infrastructure development, the central government included Chongqing in another landmark policy for increasing transfers of financial capital to the provincial government and LDCs: the creation of a national-level new area. After 25 years of rounds of land redistricting in Jiangbei, Yubei and Beibei districts, the State Council formally launched a plan to create Liang Jiang New Area (LJNA). Two years later, the State Council announced the official creation of LJNA, the first national-level new zone in western China, and the third after PNA and BNA in Shanghai and Tianjin respectively (CLJNA 2014).[18]

[17] Chang'an Automobile has also a joint-venture with the French automaker Peugeot-Citroen, Europe's second largest automobile producer. The Chang'an-Peugeot factory is in Shenzhen, Guangdong (Li 2010b). Moreover, Chang'an also has a joint-venture with the Japanese company Mazda. The headquarters of this joint-venture are in Nanjing, Jiangsu province (Zhang 2012).

[18] The central government continued establishing national level new zones. One is located in the coastal region and two are located in western China. In March 2011 the State Council announced the creation of Zhejiang Zhoushan New Zone, in Zhejiang province (ZICNC 2011; Wang 2011). In 2012, the State Council created Lanzhou New Zone in Gansu province. This national-level new zone was the second in western China, after LJNA ('Lanzhou becomes the fifth national level new zone' 2013). In the same year, the State Council approved the creation of another new zone in the coastal area: Nansha New Zone, in Guangzhou ('Guangzhou Nansha New Zone Becomes the Sixth National Level New Zone' 2012). The State Council established the third national level new area in western China: Xixian New Zone, in Shaanxi province ('The birth of Shaanxi Xixian New Zone. The Fourth National Level New Zone' 2011). Finally, the State Council approved the creation of the eight national-level new zone in Guizhou province: Guian New Zone ('Guian New Zone in Guizhou Named as National Level New Zone to Lodge the Largest Industrial Database in China' 2014).
The State Council established six national level new areas from 2014 to 2015, being 14 in total by October 2015. It established West Coast New Area in Qingdao, Shandong; Tianfu New Area in Chengdu, Sichuan; Jiangbei New Area in Nanjing, Jiangsu; Jinpu New Area in Dalian, Liaoning; Xiangjiang New Area in Changsha, Hunan; Fuzhou New Area in Fuzhou, Fujian (State Council 2015).

After this announcement, the State Council included Chongqing in the list of 'national central cities' (国家中心城市*guojia zhongxin chengshi*) in 2011. [19]

Increasingly wealthy Chongqing in the world economy

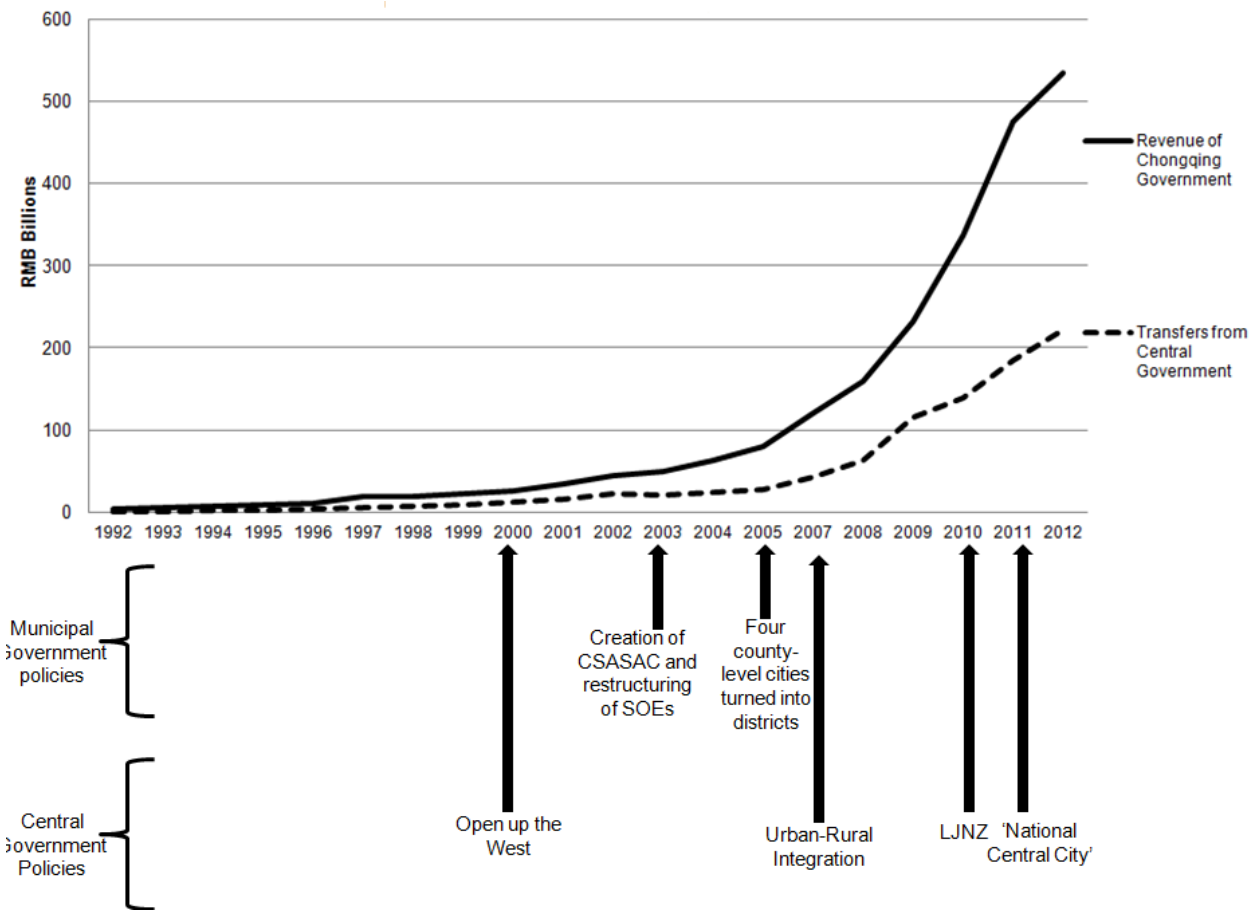
The Chongqing government launched a new spatial strategy to integrate and connect the 'one hour economic sphere' region and the recently created LJNA with connections to the world economy. This strategy, 'one river, two wings and three oceans' (一江两翼三洋 *yijiang liangyi sanyang*), connects LJNA, within the one-hour economic sphere area to Shanghai through the Yangtzi River, and from there to the Pacific. Expressways connect this region of the city to India and then to the Indian Ocean through Yunnan. The Yuxinou railway connects it to Lanzhou, Urumqi and then to the Atlantic through Central Asia, Poland and Germany. The flights from Jiangbei International Airport reach destinations in four continents: Europe, Asia, Oceania and America (Zhou & Chen 2008). Plate 4.6 shows the way in which infrastructure connects the urban core of Chongqing to the world economy.

[19] The other national central cities are Beijing, Shanghai and Guangzhou.

Plate 4.6. A map displayed in the Liang Jiang New Zone Urban Exhibition Gallery shows Chongqing's connections at world scale. By the international airport to four continents: Europe, Asia, Oceania and America. Photograph by the author.

The total revenue of all administrative units in Chongqing, including the provincial government, has increased as percentage of the city's GDP. In 1996, it was 8.2% of the GDP of the former Chongqing prefecture-level city but after the formal establishment of Chongqing as province in 1997, it increased to 12.1% of GDP. Throughout the 2000s this revenue has continued increasing, particularly after 2005. In that year, this amount was 22.9% of the city's GDP; in 2012 it surged to 46.6% of the GDP. Figure 4.6 presents the total revenue of all administrative units in Chongqing and its comparison with the transfers from the central government. The revenues that Figure 4.6 present are exclusively liquid capital and therefore the value of fixed assets of LDCs (i.e. railways, expressways, airports, and so on) is not included in this calculation.

Figure 4.6. Revenue of Chongqing and Transfers from Central Government



Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2007	2008	2009	2010	2011	2012
Revenue as % of GDP	9.9	10.4	8.8	8	8.2	12.1	11.5	13.4	14.6	16.9	19.8	19.1	20.5	22.9	25.9	27.5	35.3	42.5	47.4	46.6

Sources: Chongqing Financial Bureau 2008, 2009a, 2009b 2011a, 2011b, 2012, 2013[20]

By 2014 the central government abolished all counties to establish districts in the city's one-hour economic sphere region. The last four new districts were Rongchang, Tongliang and Bishan. Additional territorial adjustments in the developed administrative units within the one-hour economic sphere region have generated further increases in revenues for the province-level city government. The former four county-level cities and the recently created two districts form the perimeter of the nine central districts and the rest of administrative units that form the one-hour economic sphere area. The CCB and the CEDC are currently developing the third city ring road

[20] There was no information available for 2006.

that will connect all these administrative units. Manufacturing investments are being located in the space between the first and second ring road. In the future these investments would move to districts at the perimeter of the 'one hour economic sphere' area between the second and third ring roads. This economic relocation will unfold in the context of increasing investments from other industries, such as finance, real estate and telecommunications in the nine central districts (Yi 2012).

The increasing collection of land fees and profits obtained by LDCs from infrastructure development represents a complex process of capital accumulation that has accelerated since 2005. The process started in 2003, when the Chongqing government created CSASAC, restructured its LDCs and gradually abolished other LDCs at district and county levels. The daily use of infrastructural projects by people in Chongqing generates revenues for LDCs, which partly are used to pay taxes. Therefore, these conglomerates contribute to a great extent to increasing the revenues of the provincial city government.

Income from land fees increases in relation to the value of land, which is determined by its spatial relations with elements of the built environment. Thus the LDCs increase value of their own land reserves by developing projects, creating possibilities of future income streams. In this context, urban planning is a spatial strategy for state-owned capital accumulation and it is crucial to govern the time spans of the process.

The Chongqing government has reproduced this process of fixed-capital development by rescaling the most developed administrative units outside the nine central districts. After the 2004 tax reform, all administrative units in Chongqing, including the province-level city government, increased their budgetary revenues and therefore their expenditures in the rescaling of the four county-level cities into districts (Peng 2009; Li et al. 2013). These larger revenues increased budgetary expenditures, which include subsidies to LDCs for developing more infrastructural projects. Subsequently, new projects generated more rent and revenues for LDCs, which they used to pay taxes and ultimately to fund further rounds of infrastructure development.

Chapter 5

Connecting Chongqing

The roads of Chongqing skirt and tunnel the city-region's mountainous topography. They connect scattered urban areas through high bridges and long tunnels. In historic Chongqing, people arrived from the outskirts on small rural roads located at the south and northeast of the city or via the Yangzi River. It was the time of the 'three days Chongqing' (三天重庆 *santian Chongqing*) – a phrase used by the local people to describe the time required to cross the city's land area in relation to poor transport infrastructure. In the 2000s, the Chongqing government started developing roads that would 'annihilate space by time' (Berman 1982) and establish 'four hours Chongqing' (四小时重庆 *si xiaoshi Chongqing*) (Yi 2012). The transport infrastructure would achieve space-time compression by reducing time of transportation, accelerating the flows of people and commodities – ultimately increasing economic growth.

In relation to the multiple capacities of expressway development, the conceptual goal of this chapter is to analyze expressways not only as transport infrastructure facilitating production and circulation, but also as infrastructural commodities through which the CEDC realizes value to sustain capital accumulation. As part of the reform to SOEs in 2003 that has the creation of CSASAC at its core, the Chongqing government restructured and recapitalized the CEDC as the expressways developer of the city-region. The CEDC received increasing funding from state-owned banks for expressway development in association with the 'Open up the West' campaign and central government priorities in general. Thus the chapter will assess the ways in which development of expressways in Chongqing are elements of the spatial process of creating state-owned wealth.

The first section introduces dynamics of funding of expressways in Chongqing during the 1990s and 2000s in relation to central government policies and reform of LDCs. The second section assesses the way in which bank loans for expressway development structure a circuit of capital circulation that produces state-owned wealth through spatial transformation in Chongqing. The final section examines the actual flows of people and commodities through expressways in Chongqing. In this section, I assess the surplus value that each expressway brings in the largest

provincial-level city of China in terms of costs of construction and time of circulation. In other words, the way in which each expressway relates to other infrastructure projects for shaping flows of people and commodities, and ultimately capital accumulation. I also incorporate in this section an assessment of the CCB plans for developing new projects in terms of debt and assets value.

Development of expressways and land redistricting in Chongqing

Before the creation of Chongqing as province-level city, the government of the prefecture city funded development of small highways and bridges. In the early 2000s, the reform of LDCs and the inclusion of Chongqing as part of central government policies, especially 'Open up the West', provided the institutional platform for accelerating the funding and development of transport infrastructure. The provincial city government not only developed more and longer highways, but it also shifted to developing expressways.

In 1997 the Chongqing government declared that in the next five years it would invest RMB 17.45 billion in developing the second- and third-grade highways of the network. The CCB planned the 'half-hour main city, eight hours Chongqing' (半小时主城, 八小时重庆 *bangxiaoshi zhu cheng baxiaoshi Chongqing*) transportation development strategy. It divided the city land area into two parts: the nine central districts, and the rest of Chongqing. The provincial city government put RMB 8.07 billion into developing roads in the nine central districts, and RMB 9.38 billion into projects in the vast areas of northeast and southeast Chongqing (CPPCCCHS 2011, p. 37).

During the 1990s, the main sources of funding for the first projects of the road network were taxes and investments from private corporations. The province-level city government and Chongqing Road & Engineering Group (CQREG) developed three milestone projects in the late 1990s: the first three bridges across the Yangzi River connecting Yuzhong and Jiangbei districts. The CQREG invested 29% of the total cost of the projects and acquired rights for collecting part of the toll fees through a BOT scheme (The World Bank 2012; CREG 2013). Just three years later, in the context of land redistricting in Jiangbei and Yubei districts for developing a

secondary urban center, after Yuzhong district, the CCB removed toll fee posts from the bridges (Cheng 2012).

After starting to obtain funds from the 'Open up the West' campaign, from 2001 the Chongqing government shifted focus on accelerating expressway development (CPPCCCHS 2011). In 2003, the Chongqing government reformed the corporate governance of its LDCs. Among them was one that had been operating since Chongqing's years as a prefecture-level city – Chongqing Expressway Development Corporation (CEDC), which has become one of the big eight LDCs of the city. It started out by developing small fourth-class highways in late 1980s, and in 2003 CSASAC assumed its corporate governance and management, after the SOEs reform program. The CEDC operates a wide portfolio of income streams that include production of commodities, trading, logistics, real estate and banking. The largest part of its capital comes from its main business – the construction, operation and maintenance of expressways in Chongqing (GOCMG 2008).

The CEDC manages its projects through a flexible corporate structure consisting of 34 subsidiary corporations, some of which operate under 'one company, one road' (一路一公司 *yilu yi gongsi*). This means that the CEDC creates and capitalizes subsidiaries that each develop and operate a specific expressway. They manage the majority of assets and can also function as platforms to attract domestic and foreign non-state investors through joint-ventures and equity investment schemes. In 2009, the CEDC, as the parent company (母公司 *mu gongsi*), directly managed RMB 29.050 billion in assets or 30.40% of total assets, while its subsidiaries managed the majority of 69.60% of remaining total assets (Xia & Lin 2011, p. 4). This structure of asset distribution continued for the next two years. In 2010, the parent company directly managed RMB 35.654 billion in assets, 33.65% of the total, and next year, this rose to RMB 39.028 billion, 34.36% of the total (Xia & Lin 2011, p. 4).

The CEDC develops thse sections of national expressways that go through Chongqing. It plans, develops and operates each of these projects in the form of 'segments' (段 *duan*). Therefore, the CCB establishes and manages toll fees differently for each segment. For example, the section of the G65 that goes through Chongqing is 526 kilometers long and is divided in seven segments (Pei 2008). Each of these connects major urban areas in Chongqing. Each of the seven national

expressways sections has different toll fees through its segments, and therefore generates different cash flows for CEDC. The CEDC completed the segments that formed the first ring road by 2002. In 2006, the Chongqing government structured the 'one ring, two wings' spatial strategy of development under which it concentrated infrastructure development in the region of the nine central districts and 14 administrative units around them that constituted the 'ring'. This land area was the one-hour economic sphere, discussed in Chapter Four.

The national expressways that go through Chongqing are: the G42, G50, G65, G75, G85 and G93. From 2000 to 2006, the CEDC developed segments of only one expressway located outside the one-hour economic sphere: the G65 segments that connect Jiangbei district to Qianjiang district, in southeast Chongqing (Pei 2008). In the next four years, the CEDC developed segments of G42, G50 and G65 expressways, in northeast and southeast Chongqing. These had the highest construction cost. In 2010, all segments of the national-level expressways in Chongqing were completed and opened to traffic (Zhao 2010; 'Chongqing: breakthrough to 2,000 kilometers open to traffic; Two rings, eight radiants of paved roads' 2010). The G50 expressway connects Chongqing to Shanghai, G65 connects Chongqing to Inner Mongolia and Guangdong, G75 connects Chongqing to Gansu and Hainan, G42 and G93 connect Chongqing to Chengdu and G85 connects Chongqing to Yunnan.

Chongqing now has two city ring roads. The first (内环 *neihuan*) is formed by the intersection of segments of G50, G65 and G75 and it goes through seven of the nine central districts. The second ring road (二环 *er huan*), also called G5001 expressway (重庆绕城高速公路 *Chongqing rao cheng gao su gong lu*), is a subsidiary expressway of the G50 and is the only expressway of the network whose length is entirely within Chongqing administrative boundaries. The G5001 goes through eight of the nine central districts.

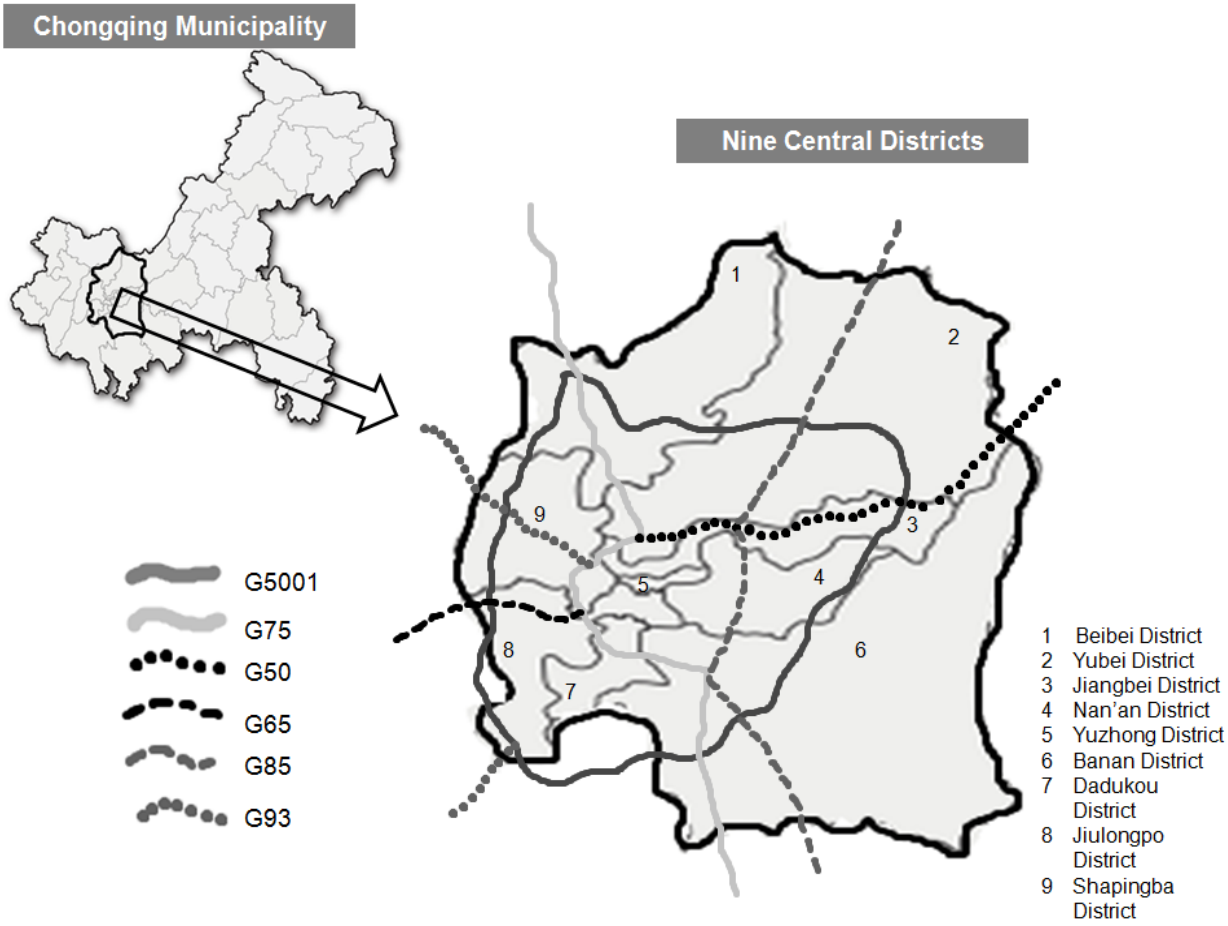
The expressways form the nerve system of transportation in Chongqing. Approximately 30% of them are either tunnels or bridges. There are 1,420 bridges and 187 tunnels (CPPCCCHS 2011), including the 268-meter-high bridge in Pengshui county, southeast Chongqing, the 10th highest bridge in China (HPOC 2013), and a 7.6 km tunnel from Shizhu county to Zhong county also in the southeast Chongqing (Chen 2012). In 2007, 94.99% of people favoured using expressways to other transport infrastructures, such as train or boat. In the same year, 84.07% of all flows of

commodities in Chongqing were transported by expressways. In comparison, just 2.81% moved by train and 1.77% by boat (Yi 2012, p. 211-212).

The most urbanized land area of Chongqing is within the first ring road, including Yuzhong district itself; whereas investments in manufacturing and real estate are urbanizing the space between the first and the second ring roads. The State Council approved the creation of the LJNA in towns of three districts north of the one-hour economic sphere area, Jiangbei, Yubei and Beibei. Most of the LJNA lies between the first and the second ring roads, where corporations such as Chang'an-Ford-Mazda joint-venture, Chang'an-Suzuki joint-venture, the motorcycle maker Lifan and the telecom giant China Mobile have settled factories.

The area of the nine central districts is the only space in China where segments of six national-level expressways intersect at 15 different places. This means that in the vast rural areas of Chongqing, there are few expressway segments, in the northeast segments of the G42 and G50, and only segments of the G65 in the southeast. In other words, most of the expressways segments of Chongqing connect the nine central districts to other major cities in China. Therefore Yuzhong district, located in the middle of the first ring road, is the administrative unit in China that has most access to national level expressways. Map 5.1 shows the location of the expressway segments and intersections in relation to the nine central districts.

Map 5.1. The six expressways that intersect in the nine central districts



Adapted from: CEDC 2012d

The Chongqing government has structured land redistricting processes in Chongqing with expressway development within its main urban areas. After the CEDC completed the segments of G75 and G50 in Yubei district, the Chongqing city government created the New North Zone (NNZ) by merging two existing economic development zones. This process in Yubei district would include other towns of Jiangbei and Beibei districts and ultimately conclude, in 2010, with the creation of the LJNA.

Outside the one-hour economic sphere, the State Council announced that an industrial zone (工业园区 *gongyeyuan qu*) in Wanzhou district and an industrial production park zone (工业产业园区 *gongye chanye yuan qu*) in Changshou district were both promoted to national-level high-tech development zones (国家级经济技术开发区 *guojiaji jingji jishu kaifaqu*) (Yi 2012).[21] These were established in the same year that the CEDC completed segments of the G42 and G50 to connect Wanzhou and Changshou districts to the nine central districts area.

The development of 2,000 kilometers of expressways in 10 years has realized profits for the CEDC in the short term but accumulated debt over the long term. All expressways form the bulk of wealth that the CEDC has accumulated on behalf of the Chongqing government. The value of these projects has appreciated throughout the years. The CEDC has registered an increase in asset value at a faster rate than any other of the big eight infrastructure development corporations of Chongqing. The CEDC's assets were valued in 2006 at RMB 50 billion; by end of 2010 this value had doubled to RMB 100 billion. In December 2010, the only three SOEs whose asset value reached this amount were the CEDC, the Chongqing Rural and Commercial Bank and the Bank of Chongqing ('Chongqing state-owned asset up 836.7 bln yuan during 11th Five-year plan' 2010b). By 2011, CEDC assets were worth RMB 113.579 billion (Gao & Yan 2012, p. 5).

The other side of this story of capital accumulation is a growing debt. The CEDC has been permanently leveraging debt to finance new projects. It has registered a constant high assets-liabilities ratio in the past five years. In 2008, the CEDC had an assets-liabilities ratio of 68.2, which by 2012 had declined to 63.8. There are other expressway developer corporations that register similar or higher assets-liabilities ratios. In 2011, Anhui Expressways Investment Corporation's ratio of 79.05 was the highest in China, followed by Henan Communications Investment Corporation of 78.54 and Shaanxi Communications Construction Corporation at 76.84 (Li 2012a, p. 12).

Creditors allocate capital based on the overall performance of sub-national economies: the more developed an administrative jurisdiction, the more capital its LDCs will receive and consequently the higher the debt it will accumulate (Walter & Fraser 2011). In this regard,

[21] In 2013, there were 192 national-level high-tech development zones in China. By 2013, the State Council had approved 24 of these zones in Jiangsu and 20 in Zhejiang. It approved few of these zones in the provincial-level cities, just five in Shanghai and only one in Tianjin and one in Beijing.

central government policies are decisive as strategies for developing particular jurisdictions. Hence, despite the similarity in the general way in which LDCs manage debt and expressway development, the main difference between them is in terms of their assets' value. In other words, an expressway in Anhui, Henan or Guangdong might have cost the same to build as one in Chongqing, but the value that developers realize from these projects is different in monetary terms.

For example, CEDC projects in Chongqing have high construction costs. From 1997 to 2011, total cost of construction of expressways in Chongqing was RMB 90.91 billion. In the same year, the CEDC registered fixed assets worth RMB 113.579 billion, a realized value of the expressways 1.24 times higher than the amount it invested (Gao & Yan 2012, p. 7; Gao 2012). The monetary representation of value realization varies among LDCs. A comparison between the CEDC and the expressways developer of Guangdong province illustrates this point. The Guangdong Communications Corporation (GCC) owns and operates approximately 70% of the expressways in Guangdong. In 2012, GCC's fixed assets were worth RMB 181.570 billion, 62.5% more than those of the CEDC. Nevertheless, the GCC owns 3,534 kilometers of expressways, approximately 176.7% more than CEDC (Wan 2012, p. 4). Each kilometer of the CEDC's expressways is worth RMB 56 million, whereas each kilometer of the GCC's expressways is worth RMB 51 million. In sum, expressways in Chongqing have appreciated at a higher rate than those in Guangdong, and therefore the government of the western province-level city can leverage more capital than the government of the coastal province.

The margin between the capital invested by an LDC in expressway development and the appreciation of assets value, expressed in monetary terms, is a complex process that is fundamentally based in the relationship that eac LDC has with state-owned creditors in the context of central government policies. Understanding this process in terms of money and fixed capital provides a window through which to explain temporalities of state-owned wealth creation. The next section discusses this process by explaining the relationship between the CEDC and its creditors, particularly the CDB and the big four banks.

State-owned wealth creation through money and expressways

This section assesses the process by which expressway development in Chongqing is mostly structured by the CEDC and state-owned banks. An assessment of the circulation of financial capital, in the form of bank loans, and fixed capital, in the form of expressways, provides an understanding of the agents and temporalities that shape spatial transformation in Chongqing. The underlying argument is that this process is creating state-owned wealth, reproducing the financial strength of both province-level city and central governments while dispersing financial risk.

I assess the corporate finance of the CEDC by employing information that this corporation submits to the stockmarket authority of China, and credit ratings that consulting firms issue by request of the CEDC ('Assessment on the securities issued by Chongqing Expressway Development Corporation in 2009' 2009; Hu 2010; Hu & Yang 2011, 2012; Yan 2012; CEDC 2009, 2010, 2012a 2012b 2012c; LCRCL 2012; Gao & Yan 2012; Xiao & Lin 2012; Sun 2010; Sun & Gao 2010; He & Lin 2011). The China stockmarket authority, under direct supervision of the PBOC and MOF, has verified and approved the data in this material. The information from this material covers four years, from 2008 to 2011. The assessment of this information explains how the CEDC and state-owned banks are structuring the 'debt-wealth relations' through expressway development and banking loans.

According to the credit and accounting reports that the CEDC has submited to the financial authorities, the corporation obtains funds for developing new projects from domestic and foreign sources. There were five main sources of capital of which four are located within China: banking loans, cash transfers and subsidies provided by CFB from taxes, revenues from its businesses (in form of toll fees) and investments from non-state corporations. There were three foreign sources of capital: investors through equity investments and joint-ventures, loans provided by foreign institutions (such as the Asian Development Bank, the World Bank or foreign banks), and capital markets. Each of these sources funded expressway development in different proportions.

For the years 2008 to 2011, the CEDC obtained banking loans worth RMB 64.10 billion from state-owned banks (CEDC 2009a, 2012b 2012c; LCRCL 2010, 2012). In the same

period, cash transfers and subsidies provided by the Chongqing Financial Bureau (CFB) were RMB 17.41 billion or just 27.16% of the amount of loans (Hu 2010; Hu & Yang 2011, 2012; Yan 2012). The CEDC obtained RMB 2.16 billion from non-state domestic and external investors through joint-ventures and equity investments and RMB 5.8 billion from capital markets through issuing financial instruments (Gao & Yan 2012; Gao 2012). The capital from these streams was just 3.3% and 0.94% respectively of the amount the CEDC obtained from bank loans. Finally, liquid capital from toll fees was extremely low. In sum, the main source of funding for the CEDC was the banking system under direct control of the central government through the Central Banking Regulatory Commission and the CDB, as a ministerial-level bank.

There were two kinds of contractual agreements through which state-owned banks provided loans to the CEDC: mortgage (抵押 *diya*), and pledge (质押 *zhiya*) (DCPAC 2011). The CEDC employed expressways as collateral to obtain more funding from banks using these two mechanisms. During construction, the CEDC deposited certain amounts of cash in its creditors' bank accounts as an additional guarantee (Hu & Yang 2011). In the event that the CEDC were unable to repay its obligations, the creditors were technically entitled to take over and operate the projects. However, this scenario was unlikely to happen. Instead, state-owned banks simply altered the maturity of loans or repackaged them as 'wealth management products' to be sold to investors or absorbed by other financial corporations (eg. AMC) or FCCs (Hu 2010; Hu & Yang 2011, 2012; Yan 2012; Gao & Yan 2012).

An assessment of the maturity of the loans, either provided by the big four banks or by the CDB, is fundamental to understanding the temporalities of expressway development. If the loans are short term, then the CEDC should be always under budget constraints to pay back debt service and loans. On the other hand, if the maturity of the loans is long, then the corporation can simply continue leveraging debt for funding projects without any bankruptcy concern in the short or even medium term. Thus it is important to draw a relationship between bank loan maturity and expressway development.

The accounting categories of current and fixed assets indicate capital derived from production. In the case of current assets, these can be profits of the conglomerate (toll fees collected from expressways in this case), savings or any other kind of revenue. The circulation of current assets

is fast, as the conglomerate can invest and transform them into other forms of capital. On the other hand, expressways are fixed assets derived from production, but its circulation time is much slower. In other words, the time span that expressways take to transform their value into money capital through the consumption of users is long.

The complementary accounting category of current and fixed assets is debt. This indicates money capital that is not derived from processes of production as it is leveraged from banking institutions. The current debt indicates loans or any other financial instruments that the CEDC can pay back in the short or medium term. In contrast, long-term debt indicates loans or obligations whose maturity is long and the CEDC has an extended period to pay back.

I structure a diagram (Figure 5.1) to explain the process by which flows of money capital from all five domestic sources circulate through the institutional assemblage that the CEDC, banks, financial and infrastructure city bureaus and non-state corporations form. The process of expressway development complements and reproduces the circulation of capital in this process. First, I calculate the share of each kind of asset and debt in the CEDC's portfolio by combining two formulas. The first one calculates the annual share of each variable. The purpose of this formula is to show how much each kind of asset and liability structures value and debt respectively. This formula will provide an insight about the variations in the two main ways in which capital can circulate: either as money, or as an infrastructural project.

The first formula is:

$$\frac{x(100)}{y} = a_1$$

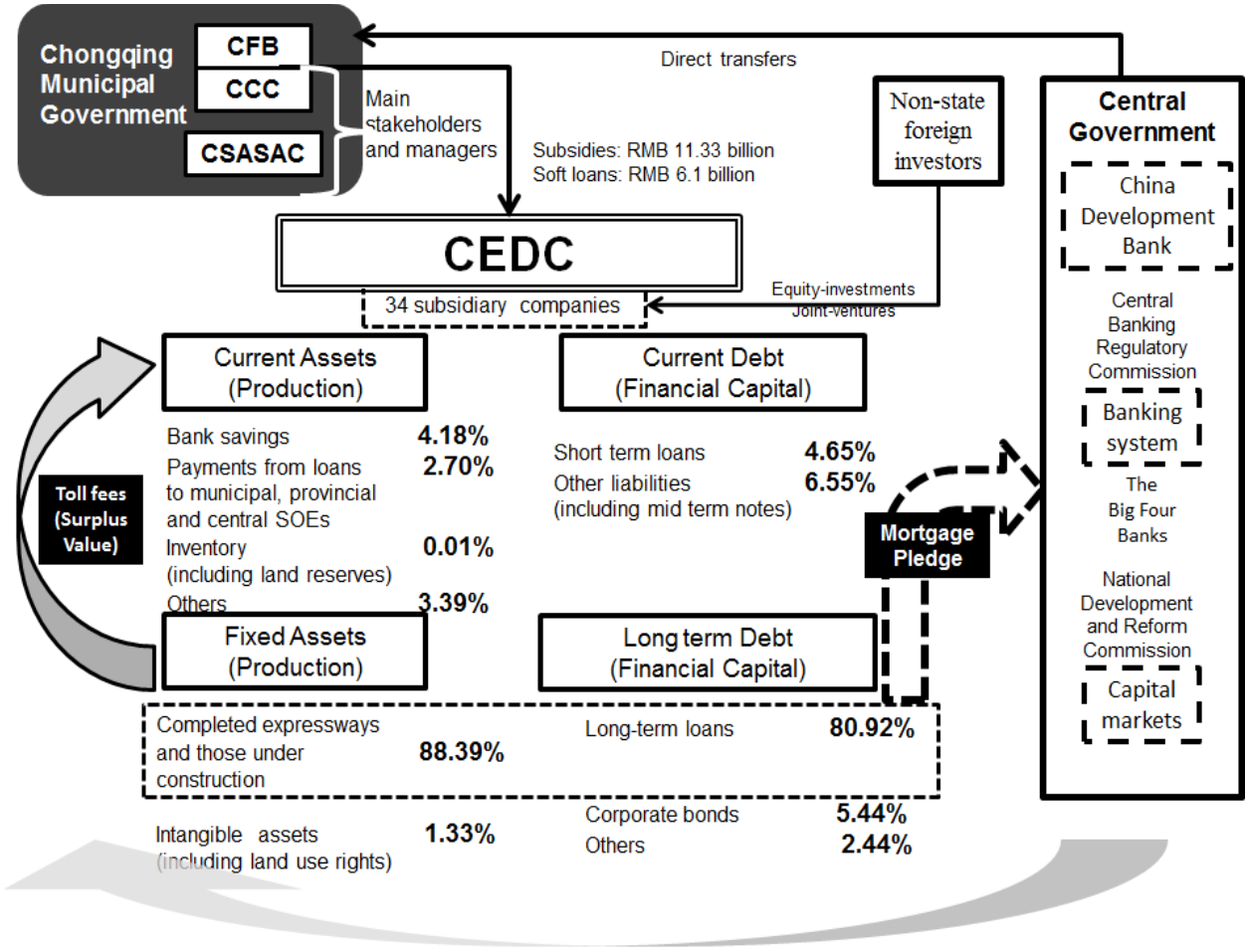
In this formula, *x* stands for the annual value of each variable, *y* is the total value of corporate asset or liability, and *a* is the annual contribution of each variable in the total value of corporate assets or liabilities. The second formula calculates the arithmetic mean (or arithmetic average) of the four values obtained from the first one. The purpose of this is to show the way in which capital circulated either as money or infrastructure throughout four years. In other words, it is a four-year projection of the data provided by the first formula.

The second formula is:

$$\frac{a_1+a_2+a_3+a_4}{4}=b$$

In this formula, *a* stands for the annual share of each variable in the years 2008 to 2011 and *b* is the final arithmetic mean, which value is included in the Figure 5.1, in front of each category of assets and debt. The latent risk of quantitative oversimplifation in combining these two formulas is missing any significant variation from one year to another. In other words, the CEDC could have registered high assets in 2008 and a drastic fall in 2009, but the formula flattens such fluctuations. Then at this juncture it is important to highlight that all values are relatively constant in the four years timeframe that Figure 5.1 represents.

Figure 5.1. CEDC: flow of capital



Sources: 'Assessment on the securities issued by Chongqing Expressway Development Corporation in 2009' 2009; Heilmann 2005; Yao & Gu 2008; Hu 2010; Hu & Yang 2011, 2012; Yan 2012; CEDC 2009a, 2012b 2012c; LCRCL 2010, 2012; Gao & Yan 2012; Xiao & Lin 2012; Sun 2010; Sun & Gao 2010; He & Lin 2011; Gao 2012; Walter & Fraser 2011

In Figure 5.1, the arrows at the top show the transfers of money capial from the banks of the central government to Chongqing city government, as well as the subsidies and soft loans that the CFB provides to the CEDC. An increase in the fiscal revenues of the province-level city government also means an increase in subsidies and transfers to the CEDC. The amount of subsidies to the CEDC from the CFB has increased since 2008. This was directly related to the increase of tax revenues collected by the Chongqing government after the tax reform of 2004 and the rescaling of the four county-level cities into districts, as discussed in Chapter four. The rectangle at the top right-hand corner of Figure 5.1 highlights that the corporation also obtains

capital from non-state foreign investors in the form of joint-ventures or equity investments. After obtaining land and money, the CEDC materializes development of expressways through its 34 subsidiaries. The dotted rectangle at the bottom of the Figure 5.1 shows that the 88.39% of CEDC's assets are derived from the actual production of expressways, and 80.92% of its corporate debt are long-term banking loans obtained from the state banking system. After developing the projects, the corporation obtains profits (surplus value) as toll fees, constituting its current assets. The corporation can employ profits for repaying its current debt, that according to Figure 5.1 represents just 11.2% of the total debt, or it can use them to cover the costs of operations (i.e. salaries, maintenance of the machinery and so on) or reinvesting them for funding new projects. Figure 1.5 shows a dotted thick arrow at the right, highlighting that the CEDC employs its projects as collateral for signing mortage or pledge contracts with state banks that leverage more banking loans and ultimately reproduce the process. The CEDC signs these deals mostly with the CDB and the big four banks, after approval of the Central Banking Regulatory Commission. However, it also obtains investments from capital markets under regulation of the NDRC.

The process of capital circulation that materializes in expressway development, and ultimately forms part of spatial transformation in Chongqing, is structured through development of expressways by the CEDC and long-term loans of the central state-owned banks. Since most of its debt is to be paid in the long term, the expressway developer of Chongqing has no temporal constraints limiting development of its projects. Hence, there is no real bankruptcy threat for low performance of assets. In other words, the CEDC can develop as many expressways as the provincial city government plans without taking into consideration their actual use by the population. In fact, according to Figure 5.1, toll fees generated by expressways from 2008 to 2011 have been just approximately 4.18% of the total current assets of the CEDC.

Figure 5.1 shows land use rights, as part of the assets that form the inventory of the CEDC, along with machinery and other industrial equipment, represent just 1.33% of the total fixed capital. Hence, the corporation is exclusively oriented to land development and is not oriented in land commoditization or collecting land conveyance fees. The inventory of the corporation, including land use rights, appear in Figure 5.1 as being just 0.01% of its total fixed assets. Therefore, the CEDC accumulates the bulk of its capital from developing land and throws it back into

circulation as collateral for receiving more loans, rather than from maintaining land reserves or speculating with value appreciation. This contradicts the argument of some assessments (Cui 2011; Huang 2011; Kai 2011) that assert that the big eight corporations of Chongqing accumulate capital mostly by speculation on land use rights.

At this point it is important to return to the discussion about the ways in which different land developers realize value from their projects at different rates. In the case of the CEDC, usage of expressways fails to generate revenues and land speculation is not an important income stream. Hence, the main determinant of value realization by the conglomerate is actually the continuous injection of money capital as loans from the banking system. In other words, the expressways yield reduced surplus value in toll fees, and therefore the only way they can create value is by returning to the banking system as 'collateral' for leveraging more loans. Therefore, the next step in understanding the circulation of financial and fixed capital in Chongqing is to unpack the funding share of the CEDC from the banking system. This assessment will provide insight into the sources of capital that ultimately are propelling spatial transformation in the largest provincial-level city of China.

Figure 5.2 is based on details from three accounting reports prepared by the CEDC for the Chinese stock market authority (Hu 2010; Hu & Yang 2011, 2012). The table presents information from 2008 to 2011. I calculated the percentage of the share of each bank in the accumulated long-term debt of the CEDC by combining two formulas. The first is for calculating the share of each bank in the annual long-term accumulated debt of the CEDC.

$$\frac{a(100)}{b} = z$$

Here, *a* is the total capital each bank or group of banks lent to the CEDC for different projects in a year (in RMB), *b* is the annual accumulated long-term debt (in RMB) and *z* represents the annual share of the capital lent by each bank as a percentage of the long term-debt. I employed the information from this formula to run the second one which is for obtaining the arithmetic central tendency in the capital lent by each bank or group of banks from 2008 to 2011. This formula is:

$$\frac{z_1 + z_2 + z_3 + z_4}{4} = c$$

Here in this formula, I include the four values for z from 2008 to 2011 to obtain c, the percentage that is shown in Figure 5.2, according to each financial institution.

Figure 5.2 Funding of CEDC by source

Administrative level	Bank or Group of Banks	% of total funding
Central	CDB	57.27%
	Big Four Banks[22]	26.98%
	Subtotal	**84.25%**
Province (Chongqing)	FCCs	1.85%
Central, Provincial or Overseas	Others	13.90%

Sources: Hu 2010; Hu & Yang 2011, 2012

Based on this analysis, the CDB contributed 57.27% of the total loans for expressway development in Chongqing. This also means that technically the ministry-level bank owns these projects if the CEDC was unable to pay back its debt. FCCs, including Yufu Securities, are not an important source of funding for the CEDC; however, these financial institutions still can be an important part in fixed capital circulation in case the CSASAC rolls out debt of the big eight corporations.

The CDB is also the main source of Chongqing's financial capital for other infrastructural projects. It opened its branch in Chongqing in 1999 and by 2001 managed projects worth RMB 6.3 billion, a figure that in just three years more surged to RMB 28.7 billion ('China Development Bank map of Chongqing: the big eight corporations vs platforms for credit' 2012; RGCDBPUC 2007). The role of Chongqing in various central government prioritized regional

[22] The 'Big Four Banks' are: ICBC, BC, CCOB and ABC.

projects provides the CEDC with preferential credit from the CDB. The CEDC and CDB structure flows of capital that fuel expressway development in Chongqing.

In addition, other investors have increasingly participated in developing certain projects or buying financial instruments that the CEDC issues, especially domestic and foreign non-state corporations. During the first three years of Chongqing as provincial-level city, the CCB leased contracts for developing only few expressways segments through BOT (BT) schemes or offered investors opportunities to form joint-ventures or equity investments with CEDC. After almost 20 years, there are greater chances for private corporations to develop expressways in Chongqing. An example of an active non-state corporation in road and expressway development is the Chongqing Road Engineering Group (CREG). This corporation has invested RMB 6.580 billion in developing expressways, roads, bridges and tunnels since the early 1990s. The CREG's largest investments have been in developing segments of the G5001, G75, G65 and G50 in the one-hour economic sphere and in northeast Chongqing (CREG 2013).

Foreign corporations have also invested in developing some expressway segments. In 2011 Infrastructure Leasing and Financial Services Limited, a corporation based in India, signed an equity investment with Yuhe Expressway Company Limited, a subsidiary of the CEDC. The Indian corporation acquired a 49% of stake in the 58-kilometer segment of the G75 that connects Beibei and Hechuan districts (The Economic Times n.d., Krishan 2011). The contract was for USD 150 million (RMB 900 million). The Thai company Taifuhua International Investment Corporation Limited signed a BOT scheme for RMB 234.9 million with a CEDC subsidiary in 2012, a 55-kilometers expressway segment of the G50 in Shizhu county, northeast Chongqing (The World Bank 2013). Taifuhua owns 100% of the toll fees until 2022.

Another source of funding for the CEDC has been the capital markets. From 2009 to 2012, the conglomerate issued RMB 3 billion mid-term notes and RMB 2.8 billion in securities. Capital markets in China are regulated by the NDRC. The underwriters of the CEDC's mid-term notes and securities were mainly state-owned banks, which also provide brokerage services to find buyers for the financial instruments (CEDC 2012c). In the case of the securities, Swiss UBS bank was one of the main underwriters, which means that this foreign bank guarantees investors that the CEDC is a reliable company with quality assets backing the financial instruments

('Assessment on the securities issued by Chongqing Expressway Development Corporation in 2009' 2009).

The CEDC has also received capital and consultancy services from the World Bank and Asian Development Bank. The first provided corporate finance consulting and debt management advice to CEDC (The World Bank 2007) and the second funding as part of the RMB 610 million loan for infrastructure development that was signed with the Chongqing government in 2009 part of 'urban and rural integration' strategy (Asian Development Bank 2009). At the time the CEDC started to issue notes and securities to attract external investors and received funding from international organizations, it had almost 2,000 kilometers of expressways registered as assets in its portfolio. Moreover, the robust tax base of the province-level city government and state banks provided enough capital to fund new projects. Hence, financial constraints were not the main reason to attract external investors by issuing financial instruments.

Circulation of people and commodities through expressways: the Chengdu-Chongqing economic region

This section provides a spatial assessment of expressways in relation to other elements of the built environment and economic activity in Chongqing and adjacent administrative units. The provincial city government, through the CCB, has governed flows of people and commodities through adjusting toll fees. This is a prerogative of the provincial-level governments, as discussed in Chapter Three. A reduction in toll fees incentivises circulation, whereas an increase has the opposite effect. In this sense, a spatial assessment of the relation between expressways and other elements of the built environment provides an overview of the way in which the province-level city government governs spaces of capital circulation. I will also assess the way in which plans for future expressways and highways represent strategies of economic governance that will extend state capital accumulation.

All provincial-level transport commissions establish and modify toll fees in relation to two variables: type of vehicle (passenger or load vehicle), and location of the expressway. Moreover, these institutions divide passenger vehicles based on the number of seats and load vehicles by the weight of loads. In Chongqing, the CCB has frequently adjusted toll fees of expressways located

in the one-hour economic sphere, particularly within the nine central districts, but rarely tolls of those in the city's northeast and southeast.

In the early 2000s, the CCB removed toll fees from bridges connecting Yuzhong and Jiangbei districts as part of a strategy to develop a second city center and creating the 'one-year toll ticket' (年费票 *nian fei piao*) (Cheng 2012; CPPCCCHS 2011). This policy allowed users to purchase a RMB 2,000 ticket allowing unlimited expressway use for one year on segments that form the first city ring road. Shortly afterwards, the CCB removed toll fees from the first ring road and the CEDC started constructing the second city ring road. By 2006, the CCB pushed the use of the 'one-year toll ticket' to expressways that connected the first ring road to Yubei and Beibei districts, at the north of the nine central districts area (CPPCCCHS 2011).

The CEDC completed the second city ring road, the G5001, in 2010. Two years later, the chairman of the CCB announced that people could now use the 'one-year toll ticket' to pay toll fees along the second city ring road. He said: 'We have arrived to the era of the outer city ring road. Chongqing is one step closer to integrate urban and rural areas' (Xu 2012; Liao 2012; Wang 2012). The second city ring road intersects with segments of four national expressways in Chongqing and connects eight of the nine central districts. Therefore, it has toll collection points in the intersections with each of the national expressways. Plates 5.1 and 5.2 show toll posts of the second city ring road located in Beibei district, at the north of the nine central districts.

Plates 5.1 and 5.2. Toll collection points of the G75 in Beibei district.
Photographs by the author

Two years after the CEDC completed the development of 2,000 kilometers of expressways, the CCB readjusted toll fees throughout Chongqing (Cheng 2012). It reduced fees on all expressways outside the second city ring road. There were just two expressway segments where the fee remained higher than those in the 'one ring' area: that of the G75 which connects Hechuan district to the nine central districts and that of the G50 which connects the 'one ring' area to Wanzhou district, in the northeast. These two expressways connected the urban core area with secondary urban areas, and thus flows of vehicles were lower than in other projects (Gao & Yan 2012). The CCB established these new toll fees for passenger vehicles; only the toll fee is uniform across al expressways of Chongqing for load vehicle according to load. Figure 5.3 shows the Chongqing's toll fees in 2012.

Figure 5.3. Toll fees in Chongqing in 2012

Passengers vehicles			
Category	Number of seats	Average toll fee (RMB/km)	
		Hechuan district-Nine central districts- Wanzhou district	Other expressways
1	9 seats or fewer	0.6	0.5
2	10 seats-25 seats	1.2	1
3	26 seats-50 seats	1.8	1.5
4	more than 50 seats	2.4	2
Load vehicles			
Normal load	Load	Toll Fee (RMB/ton and km)	
	20 tons or less	0.08	
	20 to 40 tons	0.08 to 0.04	
	more than 40 tons	0.04	
Surpass normal expressway load limit	Excess of 30% or less	Normal fee (no additional penalty)	
	Excess between 30% and 100%	Penalty of 2 to 3 times the normal fee	
	Excess of more than 100%	Penalty of 4 times the normal fee	

Adapted from Gao & Yan 2012 p. 16-17

The flow of passengers and commodities through the expressways of Chongqing has increased since 2010, after the official opening of the second ring road. This has yielded increasing revenues from toll fees to the CEDC. In 2008, it collected RMB 1.595 billion; the next year this amount was RMB 1.972 billion, an increase of 23.63%. In 2010, the CEDC obtained RMB 2.698 billion from toll fees and in 2011 this amount surged to RMB 3.377 billion (Gao & Yan 2012, p. 15). Although these revenues are almost insignificant in terms of capital accumulation and debt service payments, an assessment of the variation in toll fees revenues generated from each project informs the spatial dimension of processes of capital accumulation and circulation within Chongqing and in relation to other administrative units.

The increasing flows of people and goods are highly centralized along certain expressway segments that connect the nine central districts to the other administrative units of the 'one ring' or one-hour economic sphere. The CCB funded development of 9,906 kilometers of first- to fourth-grade highways from 2001 to 2006 in the nine central districts. In 1997, there were 27,045 kilometers of roads, which meant a density of 32.8 kilometers per 100 square kilometers in the central districts. The CCB maintained centralization of investments to increase road density in the nine central districts during the last five years in which CEDC completed 2,000 kilometers of expressways. In 2005, the road density increased to 44.8 kilometers per 100 square kilometers and was highly concentrated in the nine central districts, Fuling and Changshou districts (Chongqing Bureau of Statistics 2006).

Meanwhile, expressways in the northeast and southeast of Chongqing have not registered a significant increase in toll fee revenues and remain out of reach of the population because of the low road density in those regions, 0.45 kilometers per square kilometre in the northeast and 0.26 kilometers per square kilometre in the southeast (Chongqing Bureau of Statistics 2006). Therefore, by 2010 the nine central districts had a road density of 1.12 kilometers per square kilometer, the highest road density in Chongqing. The uneven spatial distribution of the Chongqing road network keeps 14.36 million people living in northeast and southeast Chongqing isolated. This is approximately 44% of the total population (Chongqing Bureau of Statistics 2009, 2010). The CEDC collects the bulk of toll fees from expressways whose length extends from the nine central districts to other administrative units within the one-hour economic sphere. In contrast, the low circulation of people and goods in northeast and southeast Chongqing generate lower revenues. Plates 5.3 and 5.4 show the drastic contrast between empty expressways in northeast Chongqing and the jammed expressways located within the area of the nine central districts.

From left: Plate 5.3. A segment of the G50 expressway in Wushan county, northeast Chongqing. Plate 5.4. The intersection of the G93 and the inner city ring road in Shapingba district, within the nine central districts area.

Photographs by the author

The CEDC collects most of its annual revenues from the Chengdu-Chongqing expressway which cost of construction was RMB 16 million per kilometer, the lowest among all expressways in Chongqing and 5.3 times lower than the most expensive one, the G42 segment that connects Fengjie and Wushan counties in northeast Chongqing (Pei 2008). In 2008, the CEDC obtained RMB 6.82 billion from toll fees of the Chengdu-Chongqing expressway or 42.75% of all toll fees (He & Lin 2011, p. 15). On the other hand, it obtained short revenues from the most expensive expressways in terms of cost of construction. The G65 segment that connects the nine central districts to Qianjiang district, in southeast Chongqing, cost RMB 41 million per kilometre to build, yet the CEDC obtained from it just 6.07% of its total revenues in 2008 (Pei 2008, p. 358-359; He & Lin 2011, p. 15-16).

The CCB opened to traffic all of the national expressway segments in northeast and southeast Chongqing in 2009 and 2010. In 2009, the CEDC collected RMB 7.64 billion from the Chengdu-Chongqing expressway which amounted to 38.74% of total revenue in that year (He & Lin 2011, p. 16). At this point, the inner city ring road was free and just one segment of the second ring road was operating (Pei 2008). The lowest revenue the CEDC obtained in 2010 was from two expressways in northeast Chongqing. It invested RMB 80 million per kilometer in developing

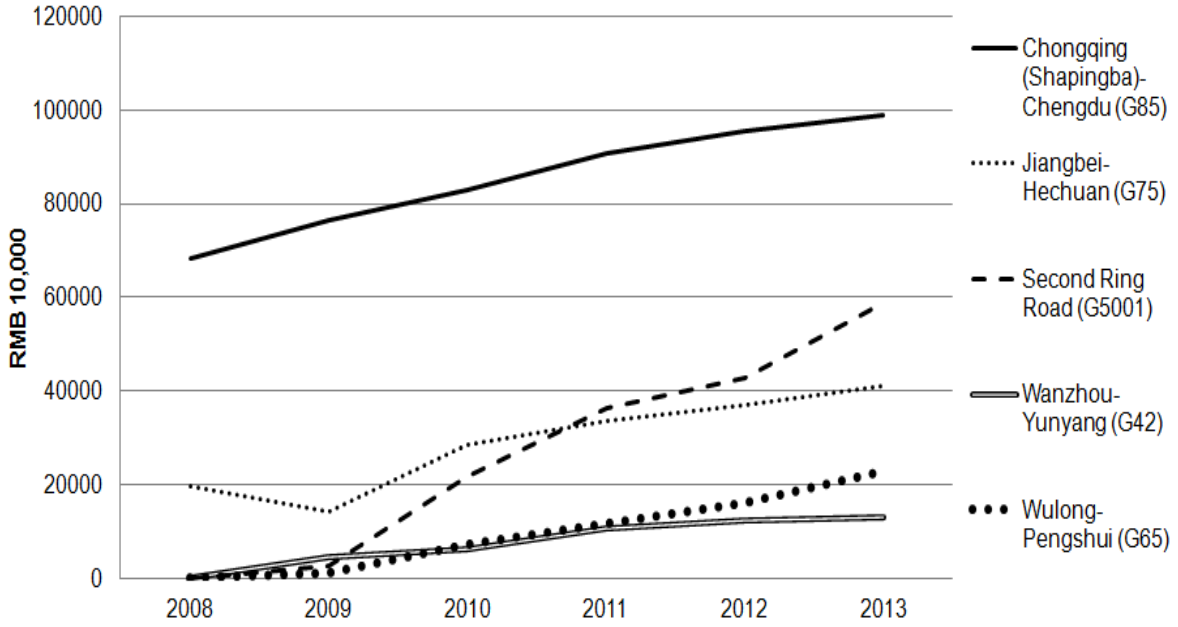
the G50 segment that connects Wanzhou district to Yunyang county, which by 2010 was the most expensive project. However, the CEDC only obtained from that expressway 2.35% of its total revenues (Pei 2008, p. 358-359; He & Lin 2011, p. 15). It had invested RMB 80 million per kilometer to develop another G50 segment in northeast Chongqing to connect Zhong county and Shizhu county in 2009, but collected just 1.03% from its annual revenues from this project one year later (Gao & Yan 2012, p. 15-16). In 2011, all segments of the second city ring road were operating, and the cash flows generated were 10.79% of the total (Gao & Yan 2012, p. 15). In other words, by 2011 circulation increased in the second ring road faster than in any other expressway in Chongqing.

The spatial relation between transport infrastructure – expressways and highways that form the road network – and other elements of the built environment also increased capital circulation and accumulation within the nine central districts. The Chongqing government has invested in developing or improving other major transportation projects within the nine central districts since 2005. These projects include the light train that connects Yuzhong, Jiangbei, Yubei and Shapingba districts, the international airport in Yubei, the two main ports in Jiangbei district and the city's train stations in Yubei and Dadukou districts. Investments in the real-estate industry in this area have also increased and obtained growing profits from rising land values. The average price in commercial real estate of Chongqing was RMB 854 per square meter in 2002; by 2007 this price increased to RMB 2,697. The sales of the real estate industry in the nine central districts were 57.7% of the total sales in the cityt (CBLRH 2009, 2010, 2011).

The projects outside the one-hour economic sphere tell the opposite side of this story. The CEDC invested the highest amount of capital for developing the expressways outside the sphere but has collected the lowest annual revenues. It invested RMB 86 million and RMB 81 million per kilometer to develop the Fengjie county-Wushan county and the Yunyang county-Fengjie county expressways respectively. Both located in northeast Chongqing and are part of the over 170-kilometers long segments of the G50 and G42 that reach Shanghai (Pei 2008). From 2009 to 2011, the revenue collected by the CEDC from all these expressways was 2.62% of its annual revenues (Gao & Yan 2012, p. 15-16). In southeast Chongqing, the CEDC invested RMB 30.4 billion in developing six segments of the G65 (Pei 2008, p. 358-359), but collected from them just 2.6% of annual revenue (Gao & Yan 2012, p. 15-16).

Figure 5.4 synthesizes the uneven surplus value yielding curves of the expressways in Chongqing. The Chongqing-Chengdu expressway segment appears at the top, as the main source of liquid capital for the CEDC. The increasing revenues generated from the second ring road places this expressway as the second most important for the CEDC in profitability. In contrast, the expressway segments located in northeast and southeast Chongqing generate low revenue for the CEDC. Such is the case of the Wanzhou-Yunyang and the Wulong-Pengshui segments.

Figure 5.4. Toll fee revenue of expressways in Chongqing

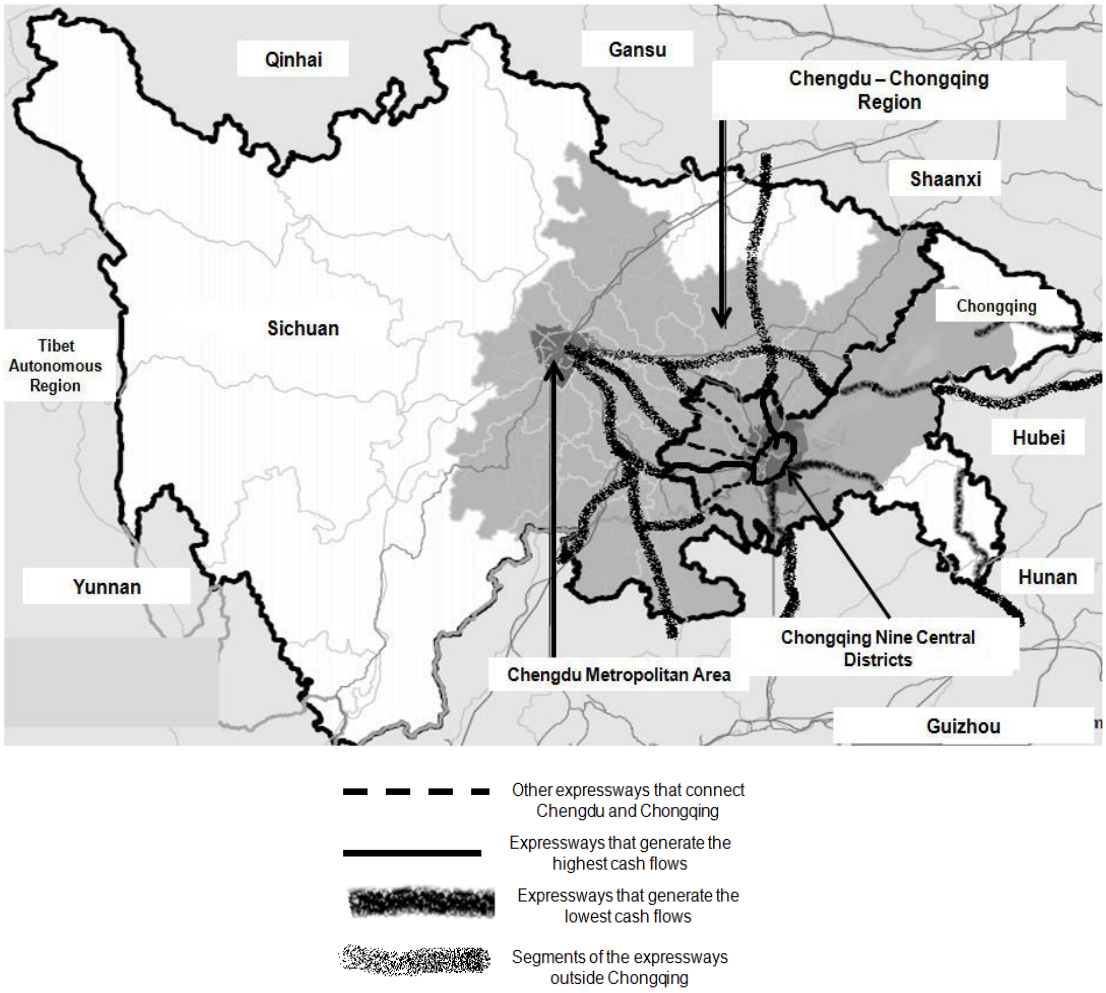


Sources: Sun & Gao 2010; Gao & Yan 2012; Gao 2012; Liu & Wang 2013

A common spatial feature of all the expressways segments that generate the most of the CEDC's revenue is that they intersect inside the nine central districts. Moreover, the most profitable projects connect the land area of these central districts to Chengdu metropolitan region in Sichuan province. The G85, the first expressway of Chongqing and part of the Chongqing-Kunming Expressway, connects the nine central districts to Chengdu by intersecting the Sichuan-Guizhou Expressway. The G75 segment that connects Hechuan with the inner city ring road also goes to Chengdu, by intersecting the G42. Moreover, there are the two segments of the G93 that connect these two urban areas by intersecting the G42 and the Sichuan-Guizhou expressway. Map 5.2 shows the location of the expressways from which the CEDC collects the

bulk of its revenues, those that generate the lowest revenues and the ones that connect Chongqing to Chengdu.

Map 5.2. Expressways in the Chengdu – Chongqing region



Adapted from OECD 2007

There is actually just one expressway that connects the two urban areas directly, reducing the transport time from four hours in 2008, to two hours in 2009. It is a subsidiary line (复线 *fuxian*) of the city's second ring road (G5001) ('The construction of the shortest Chengdu-Chongqing expressway starts' 2009). Hence, there are five expressways that connect the nine central districts to the Chengdu metropolitan region, to form the heart of the Chengdu-Chongqing economic region.

Expressway development and circulation of people and commodities in Chongqing, and particularly in the nine central districts, are economic processes that unfold in the Chengdu-Chongqing economic region – one of the main four national economic regions and the only one located in western China. The Chengdu-Chongqing economic region covers 206,100 square kilometers, approximately 2.1% of the national land area. It includes 14 prefecture-level cities and one sub-provincial city, Chengdu, in Sichuan province. This economic region encompasses all the administrative units of the one-hour economic sphere as well as other counties located in northeast Chongqing (OECD 2007; Yi 2012).

In the Chengdu-Chongqing region, expressways and roads are crucial transport infrastructural projects connecting regional flows of people and goods to eastern China. The urban core of the nine central districts of Chongqing is connected directly to the Yangtzi River Delta region through the Yangtzi River itself and the G50 expressway. The G65 expressway goes from the urban core of Chongqing to Guangdong, in the Great Pearl River Delta region. The northern segments of the G65 expressway connect the urban core of Chongqing to the Inner Mongolia segment of the Urumqi-Beijing expressway (CPPCCCHS 2011). Plate 5.5 shows the connections of Chongqing with Chengdu and beyond to other regional urban centers in China. The map in Plate 5.5 is divided into two parts: eastern and western China. Chongqing appears as the urban frontier between both regions and at the center of the urban centers of western China (Guiyang and Kunming to the south, Lanzhou and Xi'an to the north, Urumqi to the northwest and Lasha to the southwest). Thus, Plate 5.5 shows the strategic location of Chongqing and the Chengdu-Chongqing region in relation to other urban regional centers of China in the context of the national economy.

Plate 5.5. This map shows the connection of Chongqing with other economic regions in China though different through expressways and railways. It also presents the national level economic zones that each of the main economic regions lodges. This map is displayed in the Liang Jiang New Zone Urban Exhibition Gallery, Yubei district.

Photograph by the author

The CCB formulated the 2020 Chongqing Transport Infrastructure Plan that includes the 'three rings, eleven radiants, multiple lines' policy (三环十射多联线 *san huan shi she duo lian xian*), through which Chongqing plans to develop 1,600 kilometers more of expressways. The CFB has already prepared a budget of RMB 81.69 billion for subsidizing the CEDC for the first 14 projects of this new phase of transport infrastructure development (CPPCCCHS 2011; Xia & Lin 2012, p. 6). The CEDC will develop two new expressways that connect the nine urban districts of Chongqing to the Chengdu metropolitan area and a third ring road in the one-hour economic sphere. Most of the new projects will be first-grade highways of the city's road network which length is circumscribed within Chongqing, meaning that not all these new projects will necessarily charge toll fees to users.

In terms of construction costs and length, the most important project within the one-hour economic sphere will be the third ring road. It will connect 10 of the 12 administrative units that form the perimeter of the sphere. There will be only two counties that the third ring road will not connect: Rongchang and Tongnan (Yi 2012). Thus third city ring road will run near factories, shops and other production facilities of foreign and domestic companies in automobile and motorcycle, telecommunications and logistics.

From the spatial relation between existing infrastructure elements and further investments in new projects, the first and second ring roads will be an important source of value creation, particularly to the real estate industry. There are ambitious projects to build a 'second Chongqing downtown' in Yubei district. These projects plan to create another highly urbanized territory in Chongqing, such as Yuzhong district. The CCB created the 'one-year ticket' to set certain expressways as frontiers or facilitators for circulation. Currently, the second city ring road is the 'one year ticket' frontier. When the CEDC completes the third city ring road, the CCB might reduce or even remove toll fees from the second ring road and push the 'one-year ticket' out to the third ring road.

The CCB has planned to develop more expressways in northeast and southeast Chongqing. Some of these new projects are parallel to existing roads or will connect expressways that have minimal traffic. Despite the low flows of people and goods in those two regions, the CCB plans to continue developing projects through the CEDC. In the northeast, there will be two first-grade highways connecting four small urban areas in four counties: Chengkou county-Kaixian county, and Fengjie county-Wuxi county. These highways are to be perpendicular to a G50 segment, that has the lowest generation of revenue in Chongqing. Another planned highway, also perpendicular to the G50, will connect two counties of the northeast region to the only district in the southeast region. The CCB plans another expressway parallel to this to connect the three counties at the border of the one-hour economic sphere. All these expressways are planned for counties with low economic development. Plate 5.6 shows the 'three rings, eleven radiants, multiple lines' policy of the CCB. Many of the new projects the CEDC will develop are located in the vast rural areas of northeast and southeast Chongqing, as shown in Plate 5.6.

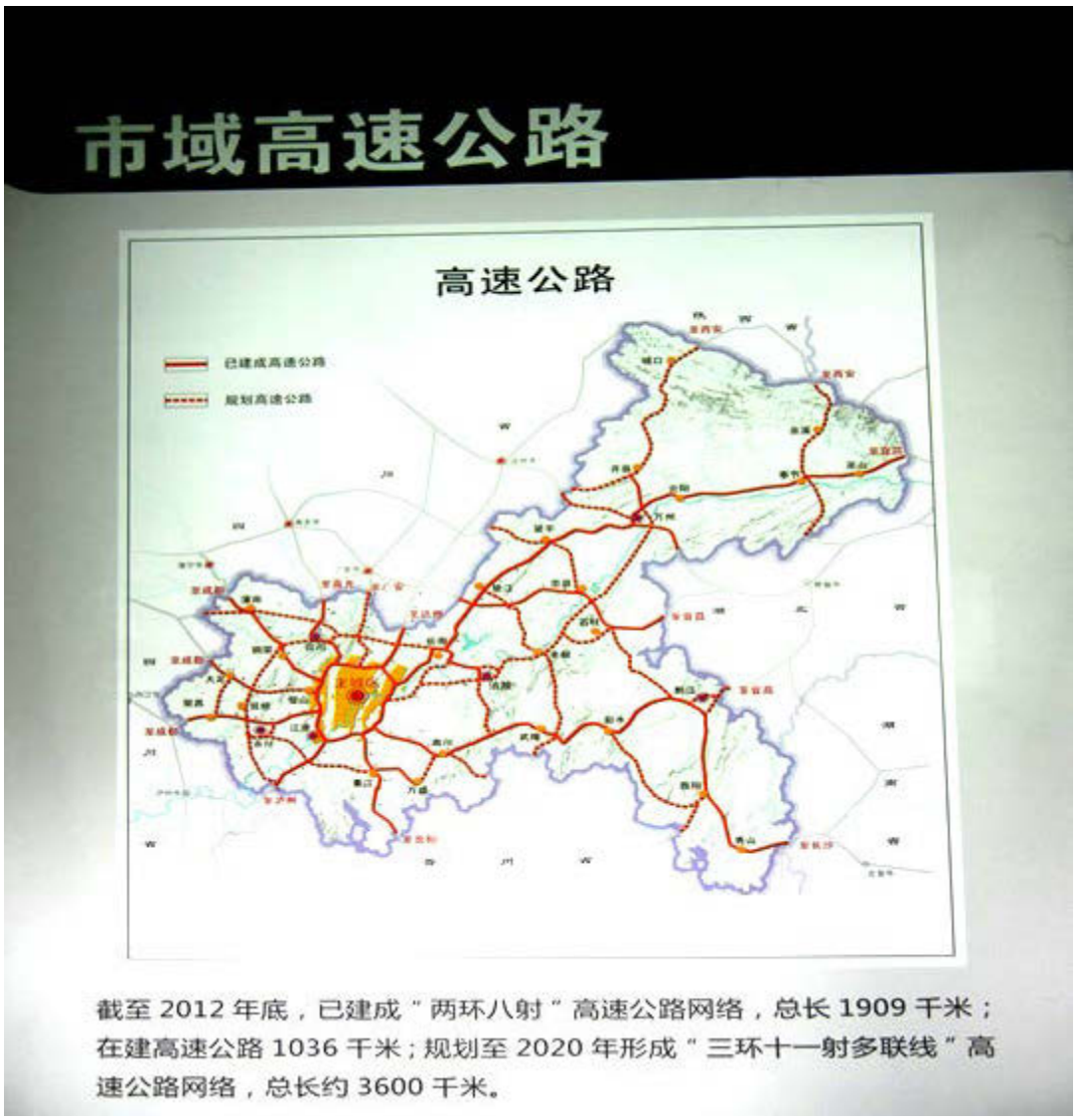


Plate 5.6. This map shows projects under development as part of the ‘three rings, eleven radiants and multiple lines’ strategy of expressway development. The map is displayed in the Chongqing Planning Exhibition Gallery, as part of the Urban-Rural Master Plan of Chongqing.
Photograph by the author

The CEDC will invest more capital in developing the new expressways network in northeast and southeast Chongqing than it did developing the third city ring road in the one-hour economic sphere.This means that the CEDC will leverage large amounts of money capital to develop projects that will generate very low surplus value. The projects that are in operation in the area of the ‘two wings’ generate low profits. Leverage of debt for developing other projects could

accelerate the flow of people and commodities, though it also represents an increase in liabilities. Hence, the CEDC will have to wait an even longer time for recovering its investment in these risky projects in the isolated rural hinterlands of Chongqing.

The most expensive project to build will be the expressway to connect Qianjiang district to Shizhu county, in southeast Chongqing. The CEDC will invest RMB 13.18 billion in developing this 83-kilometers long project. Similarly, the highway that will connect small urban areas of Wuxi county, in northeast Chongqing will be 49.80-kilometer long and require an investment of RMB 8.8 billion (Xia & Lin 2012, p. 6).

Industries such as finance, real estate, logistics, automobile-motorcycle and telecommunications are establishing their corporate headquarters in the most urbanized areas of the nine central districts. Meanwhile; metallurgic, chemical, cement, pharmaceutical and other light industries are relocating factories and other facilities between the second and the third ring roads, to adjacent districts or nearby provinces ('Industrial gas leader sets base in Chongqing' 2011; 'Chongqing to build 300-bl-yuan chemical industry city' 2011; 'Chongqing to eliminate 7 backward industries' 2013). Production chains of light industries such as machinery, chemical and pharmaceuticals are located not just within the Chengdu-Chongqing economic region but also in Xi'an, capital of Shaanxi province. Chengdu, Chongqing and Xi'an form the 'triangle of the west' (西三角 *xisanjiao*) great economic region (Lan et al. 2011).

The other part of this planned activity is the spatial relation of the expressways and highways located in northeast and southeast Chongqing with the small urban areas of those regions. The province-level city government is not planning to increase funding for developing other major transportation infrastructural projects in those two regions (Yi 2012). Therefore, the projects located in those regions of Chongqing will be redundant reproductions of already existing expressways segments.

The development of these new expressways and highways reproduce processes of capital accumulation and circulation of the CEDC and state-owned banks in Chongqing, albeit in different ways according to their spatial relation with other elements of the built environment and the regions where they are located. The development of new CEDC projects in the one-hour economic sphere functions as both commodities produced and integrated by the developer

conglomerate to circuits of financial and fixed capital, and as transport infrastructure that accelerates circulation and increases accumulation. In contrast, projects located in low urbanized northeast and southeast regions of Chongqing, where circulation of people and goods is lower, function mostly as commodities that CEDC employs as collateral to leverage more financial capital from the state-owned banks.

The CEDC will employ the expressways in the northeast and southeast as collateral for obtaining more preferential loans from the CDB or any other state-owned bank. The importance of those projects in economic terms is not about how much they can facilitate circulation in those two regions of Chongqing, but the way in which the CEDC can integrate them into the circuits of financial and fixed capital circulation it structures with the state-owned banks. Therefore, the location of each new expressway or highway in the regions of Chongqing and even in certain administrative units is crucial to determine its function as part of the process of state-owned capital accumulation.

Chapter 6

Liang Jiang New Area: a new space of development

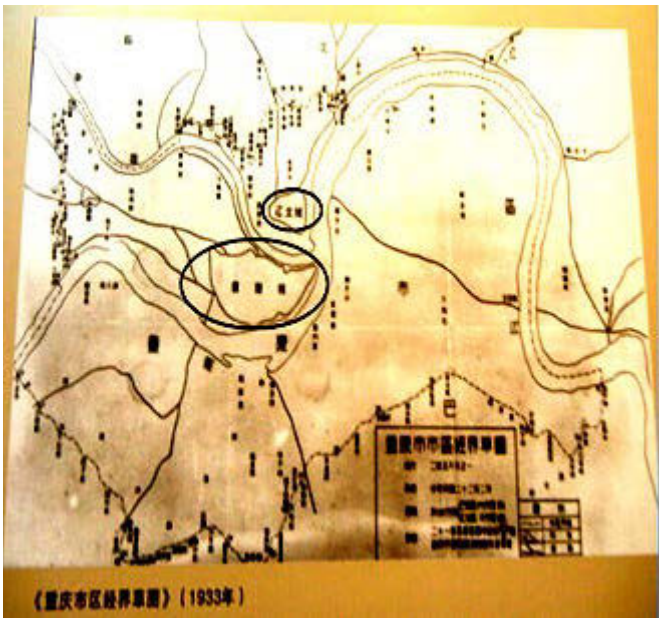
The State Council approved the creation of LJNA in 2010, the first new area in the interior of China after Pudong in Shanghai and Binhai in Tianjin, as the last step in a 25-year process of land redistricting in three of the nine central districts of Chongqing: Jiangbei, Yubei and Beibei. These three administrative units have had interrelated yet different processes of economic development over the course of the reform era. Their spatial relations with Yuzhong, the only fully urbanized district of Chongqing and the epicenter of economic development, have been an important factor in the development of the region. The main goal of this chapter is to explain the establishment of the LJNA as a territorial strategy of the central government to increase revenue collection and accumulation of capital by its SOEs through governing the urban expansion of the northern part of the nine central districts of Chongqing.

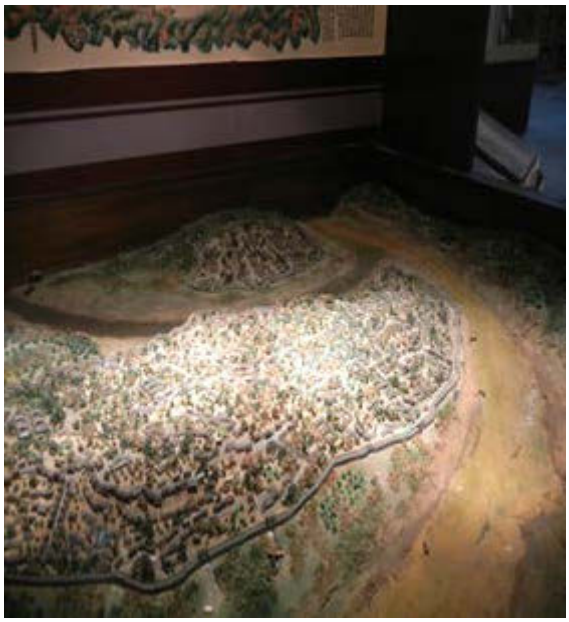
The first section assesses the 25-year period of land redistricting in relation to fixed capital development and commodity production that preceded the creation of the LJNA in Jiangbei, Yubei and Beibei districts. I first provide a historical background on the process of land commodification and infrastructure development in these three districts, and then discuss the way in which the central government reterritorialized their power relations by creating the LJNA. The second section discusses the LJNA as a spatial economy of the central government by assessing it as a territorial strategy for increasing the profitability of central SOEs through infrastructure development and taxation. The last section assesses the future plans of development in the LJNA.

The creation of the LJNA

The historical epicenter of economic activity in Chongqing has been Yuzhong district which forms forms a peninsula in the Yangzi River. Plates 6.1 and 6.2 show the way in which the Yangzi River surrounds the historical city center of Chongqing in Yuzhong district. During Chongqing's years as a prefecture-level city in Sichuan, infrastructure development extended from Yuzhong towards Shapingba and Jiulongpo districts. However, since the mid-1990s the

Chongqing government accelerated land commodification and transferred capital for infrastructure development to the three districts to the north of Yuzhong: Jiangbei, Yubei and Beibei.





From left: Plates 6.1. A 1933 map of Chongqing and surrounding areas displayed in Three Gorges Museum. The large circle highlights the current Yuzhong district, which on the map appears as 重庆城 (*Chongqing cheng*) or the city of Chongqing. The small circle highlights part of present day Jiangbei district, which appears on the map as 江北城 (*Jiangbei cheng*) or the city of Jiangbei. The map represents the land area of Chongqing city (重庆市 *Chongqing shi*). Plate 6.2. A model of current Yuzhong and Jiangbei districts as urban centers of Chongqing during the dynastic era displayed in the Three Gorges Museum. This model presents the peninsula of current Yuzhong district as urban core area, and current Jiangbei district as urban periphery located to the north.
Photographs by the author

The Chongqing prefecture government focused development towards the western and south-western part of Yuzhong district in the first two decades of the reform era (Yang et al. 2011). Meanwhile, scattered manufacturing from industrial facilities connected by small highways and agriculture production formed the economy of the administrative units to the north of Yuzhong. In 1985, the prefectural government started developing the first major transport infrastructure outside Yuzhong: the Jiangbei Airport. The airport, located in the middle of the vast rural areas of Jiangbei county, opened in 1990.

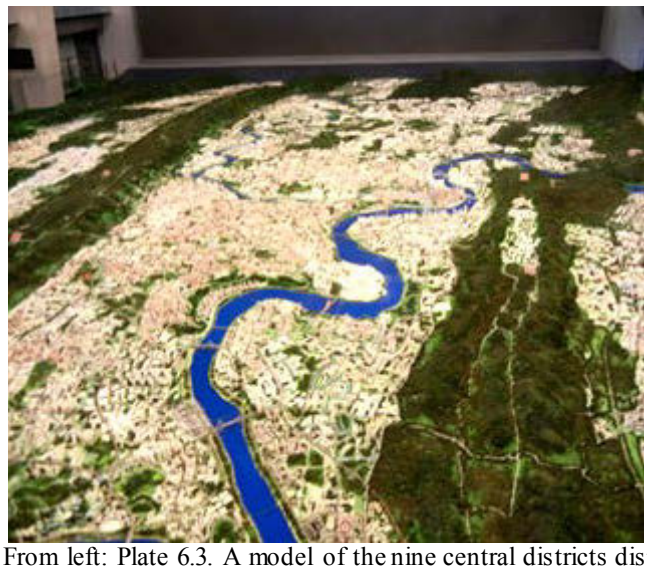
The prefectural government conceived the land area between the airport and the small and scattered urban areas of adjacent Jiangbei district as crucial space for initiating land commodification and from where to begin infrastructure development in northern Chongqing. In 1985, the State Council approved rescaling Longxi township (乡 *xiang*), an administrative unit in Jiangbei county, at the border with Jiangbei district, into a town (镇 *zhen*) (Li 2011). Besides Longxi town was the first Chang'an Corporation automobile factory in Chongqing (Yin 2009). The prefectural government developed a 21-kilometer highway to connect Longxi town with Lianglu town, which was adjacent to Jiangbei airport (Li 2011). After the opening of Jiangbei Airport, the prefectural government created two development zones adjacent to Longxi town. In 1991, it created the CHTDZ (Chongqing High-Tech Development Zone) and two years later it created the CETDZ (Chongqing Economic Technology Development Zone) (Chongqing Government 2007). In 1993, the prefectural government leased 1.47 square kilometers in Longxi town to a Hong Kong real estate corporation for developing a RMB 200 million real estate project (Li 2011). This was the first land commoditization transaction in the administrative units in northern Chongqing. In terms of transport infrastructure, the prefectural government developed three bridges by establishing a BOT contract with the CQREG. These bridges connected Jiangbei district to Yuzhong district across the Yangtzi River (CREG 2013).

In the mid-1990s, Yuzhong district was the most urbanized area of Chongqing, and Jiangbei district and Jiangbei county were low urbanized areas. In 1993, agriculture was the main industrial activity in Jiangbei county, whereas Jiangbei district had light and heavy manufacturing (Chongqing Bureau of Statistics 1996). In the context of land conversion in the nine central administrative units, as part of the development of the Three Gorges Dam, and increasing transfers of money capital from the central government, the Chongqing prefectural government started to evaluate a new spatial development strategy for Jiangbei district and Jiangbei county.

Until this moment, the prefecture government of Chongqing had concentrated its investments in developing Yuzhong district as the only urban center of the city. The spatial pattern of urbanization was therefore characterized as 'island consciousness' (孤岛意识 *gudao yishi*) (Liu

et al. 2007). In this context, in 1994 the State Council approved rescaling Jiangbei county into a district, albeit with a different name- Yubei district. It was the last round of land districting that formed the nine central districts of Chongqing prefecture-level city. Three years after the construction of the Three Gorges Dam began, and when the central government prepared transfers of money capital for the 'Open up the West' programme, it merged two prefecture-level cities and one prefecture into Chongqing prefecture-level city to create the Chongqing province-level city in 1997. The following year, the new government designed a new urban master plan that conceived the nine central districts as the main city (主城 *zhucheng*), including Jiangbei and Yubei districts (Liu et al. 2007).

The nine central districts are divided by the Tangluo and Zhongliang mountain chains which run through Jiangbei and Yubei districts and divide them into three corridors. The government focused land commodification was concentrated in the central corridor throughout the 1990s. Plates 6.3 and 6.4 show this topography. Plate 6.3 shows a model in the Chongqing Urban Exhibition Museum that clearly shows the Yangtzi River and the two mountains in relation to the three corridors of urbanization, meanwhile Plate 6.4 shows a view of Zhongliang Mountain from Jiangbei district. The new government targeted land areas in both external corridors as crucial spaces for developing manufacturing industries (Liu et al. 2007).




From left: Plate 6.3. A model of the nine central districts displayed in the Chongqing Urban Exhibition Museum. Plate 6.5. A view of part of Zhongliang mountain in Jiangbei district. Photographs by the author

At the beginning of the era of Chongqing as province, Yuzhong district was the administrative unit in which the government concentrated most of its investments in infrastructure. Its land area is 0.02% of the city's total, but in 1998 it had 15.7% of the investments in infrastructure development (Chongqing Bureau of Statistics 1999). The provincial city government formulated a macro strategy for expanding the urban core area towards north: 'move to the north, extend the south, expand the west and enter the east' (北移 南扩 西拓 东进 *beiyi nankuo xituo dongjin*), and particularly to Yubei and Jiangbei districts (Yan & Wu 2007). Thus since 1997, the Chongqing government has developed these two districts as secondary urban centers. The State Council rescaled former Longxi town into a street committee (街道 *jiedao*) and located in it the headquarters of the People's Liberation Army military police and the PBOC Chongqing branch (Li 2011).

In 2000, the Chongqing government merged the two economic zones in Yubei district to create the New North Zone (NNZ) in 130 square kilometers (Dan 2013) consisting of 8.9% of the total land area of Yubei district, between Longxi street committee and the Jiangbei Airport. At the time of its creation it contained 48.74% of the investment in infrastructure development in Yubei district (Chongqing Bureau of Statistics 2002). Just months after the creation of the NNZ, Chang'an established its joint-venture with Ford and Mazda in its northern extent (Li 2011). Chang'an and Yubei district created and capitalized Chongqing Haitai Property Management

(Zhang 2004). This LDC at county level completed development of the Chang'an-Ford-Mazda factory, which appears in Plate 6.6, in the NNZ by 2001 (CHTIC 2014).[23] Chang'an moved part of its production base from Jiangbei district to the NNZ (Zhang 2004). Therefore, after 2001, Chang'an was operating two main factories in Jiangbei district: one was producing engines and light equipment and the other microvans, small trucks and some automobile models.[24] Plate 6.5 shows the only remaining Chang'an factory in Jiangbei district.

From left: Plate 6.5. The only Chang'an automobile factory in Jiangbei district. Plate 6.6. View of a parking lot full of automobiles adjacent to the Chang'an –Ford-Mazda factory in the NNZ. Photographs by the author

In the early 2000s, in the context of land conversions in administrative units within the land area of the Three Gorges Dam water reservoir, the Chongqing government concentrated investments in developing new infrastructure in the nine central districts, particularly in Yubei and Jiangbei districts. The CCB and CEDC started developing segments of the G50, G65 and G75 that intersect in Yubei and Jiangbei districts, forming the first city ring road in 2000. Three years later these expressways were completed and opened to traffic (Pei 2008). In 2002, Yubei district registered investments in infrastructure worth RMB 8.09 billion; the highest rate in Chongqing, while Jiangbei district had RMB 4.9 billion of investments (Chongqing Bureau of Statistics

[23] This LDC has created subsidiary corporations to develop Chang'an factories in Nanjing (Zhang 2004).
[24] Chang'an developed more factories in other administrative units of Chongqing after 2001. In Ban'an district, at the southern of the nine central districts area, Chang'an developed two factories. One of them produces automobile models of its joint-venture with the Japanese firm Suzuki and the other one produces other Chang'an automobile models (Chang'an Suzuki 2011).

2003).

The province-level city government continued land redistricting in 2002 by creating the Chongqing Airport Development Zone (CADZ). This new zone had a land area of 54 square kilometers and was located in a Yubei district town adjacent to Jiangbei Airport. The land use of this zone was for mixed development such as manufacturing, retail sales and services (i.e. restaurants, schools, and so on). Yubei district government put its headquarters in the CADZ (Yin 2009). In 2003, the CEDC finished developing the G50, G65 and G75 expressways, connecting Jiangbei and Yubei districts with Beibei district. Beibei district, at 755 square kilometres, is 541 square kilometers larger than Jiangbei district and 697 square kilometers smaller than Yubei (Chongqing Bureau of Statistics 2003). Manufacture, tourism, real estate and education are its main industries, accounting for 40.9% of its GDP in 2003 (Chongqing Bureau of Statistics 2004). Beibei district is known as the 'backyard' (后花园 *hou huayuan*) of the nine central districts for its tourism and recreational facilities (Zhang 2004).

The LDCs and the spatial transformation of Jiangbei, Yubei and Beibei districts

In 2003, the provincial city government restructured and recapitalized the big eight LDCs and created the CSASAC to govern their assets management. Two of them, the CREG and CUCIC, have been in charge of developing the main infrastructure projects in Jiangbei and Yubei districts since 2003 (Zhang 2006). Yufu Securities facilitated this process by either providing additional funds to both LDCs or assisting in land commodification processes. In 2004, the Chongqing government approved the developing of two landmark projects that transformed the economy of Jiangbei district: the Guanyinqiao Commercial District, and Jiangbei Financial District. Jiangbei district government created a LDC and formed a joint-venture with the CREG and CUCIC to develop these two projects (Zhang 2006), and Yufu Securities managed part of the land reserves, collecting rent worth RMB 991.1 million (Zhang 2006, p. 118). Guanyinqiao is the third most important commercial district in Chongqing after Jiefangbei in Yuzhong district and Yangjiaping in Jiulongbo district (Yin 2009). The big four state banks, the Bank of Chongqing, the Rural and the Commercial Bank of Chongqing, and the CDB have placed their Chongqing corporate

headquarters in the Jiangbei Financial District. Plate 6.7 shows the headquarters of CDB and other banks in Jiangbei Financial District, and Plate 6.8 shows the main shopping center in Guanyinqiao.

From left: Plate 6.7. A part of the financial center in Jiangbei City, where the state-owned banks have settled their Chongqing branches, including CDB. Plate 6.8. The heart of Guanyinqiao commercial district, in Jiangbei district. Photographs by the author.

At the beginning of 2007, real estate transactions in Jiangbei and Yubei accounted for 30.2% of the total in Chongqing (Zhang 2006, p. 145), and by 2009, real-estate values was higher than in Yuzhong for the first time (Zhang 2010, p. 139). After the opening of the G75 segment that goes through the NNZ, the CCB developed other highways of the city's road network to increase road density, appreciating real estate value within the NNZ at a faster rate than in the rest of Yubei district (Zhang 2008, p. 136). The Chongqing government created the Lianglu Duty Free Port (LDFP) in central Jiangbei district in 2008, the first international port infrastructure in western China with facilities of the China Customs and Inspection Bureau. The CREG formed a joint-venture with the LDFP's own LDC for developing roads, buildings and the rest of the infrastructure (CLCTFTPA n.d.). The flows of commodities from the port reach Shanghai along the Yangtze River in approximately 10 days. The annual transportation capacity of the LDFP is 1.4 million containers (CLCTFTPA n.d.).

Chang'an has gradually moved its chains of production from the urbanized areas of Jiangbei to the vast rural areas of central Yubei. Besides establishing a factory with Ford and Mazda, Chang'an also manages a factory that produces weapons for the People's Liberation Army in CADZ. These two factories are the largest in land area is the CADZ. ('The special production of Chang'an leaves the city and arrives to the suburbs- In two years it will be entirely moved to the Airport Development Park' 2007). The province-level city government increased transfer of money capital to LDCs for improving the infrastructure in Jiangbei and Yubei districts. By 2005, Jiangbei Airport was an international airport (Li 2011). The CEDC developed a first-grade highway directly connecting the Jiangbei International Airport with the NNZ and the Guanyinqiao commercial district. The 16-kilometers-long highway has six car lanes ('Jinkai Road is opened to traffic – The Northern Part of the Main City is Connected' 2010). Moreover, the CEDC completed the G5001 (second city ring road), the only expressway that connects the three districts. Accelerated infrastructure development for 12 years during the era of Chongqing as city at province level consolidated Jiangbei, Yubei and Beibei districts as the epicenter of economic growth in the nine central districts, representing 31% of the GDP and 41.7% of the investments in infrastructure (Chongqing Bureau of Statistics 2009).

The economic spatial relations between the southern part of Yubei district and the eastern part of Jiangbei district were converging towards extending the developing of finance, real estate and retail sales. The manufacturing industry, particularly Chang'an, has increasingly invested in developing new facilities; when the Chongqing government accelerated land commoditization in southern Beibei district to crate space for further investments in education and real-estate. These economic processes had been unfolding in a land area of approximately 300 square kilometres, and represent the main source of growth in Chongqing during its era as provincial-level city. In this context, the State Council decided to rescale governing the most developed towns and street committees of Jiangbei, Yubei and Beibei districts by creating a national level new area.

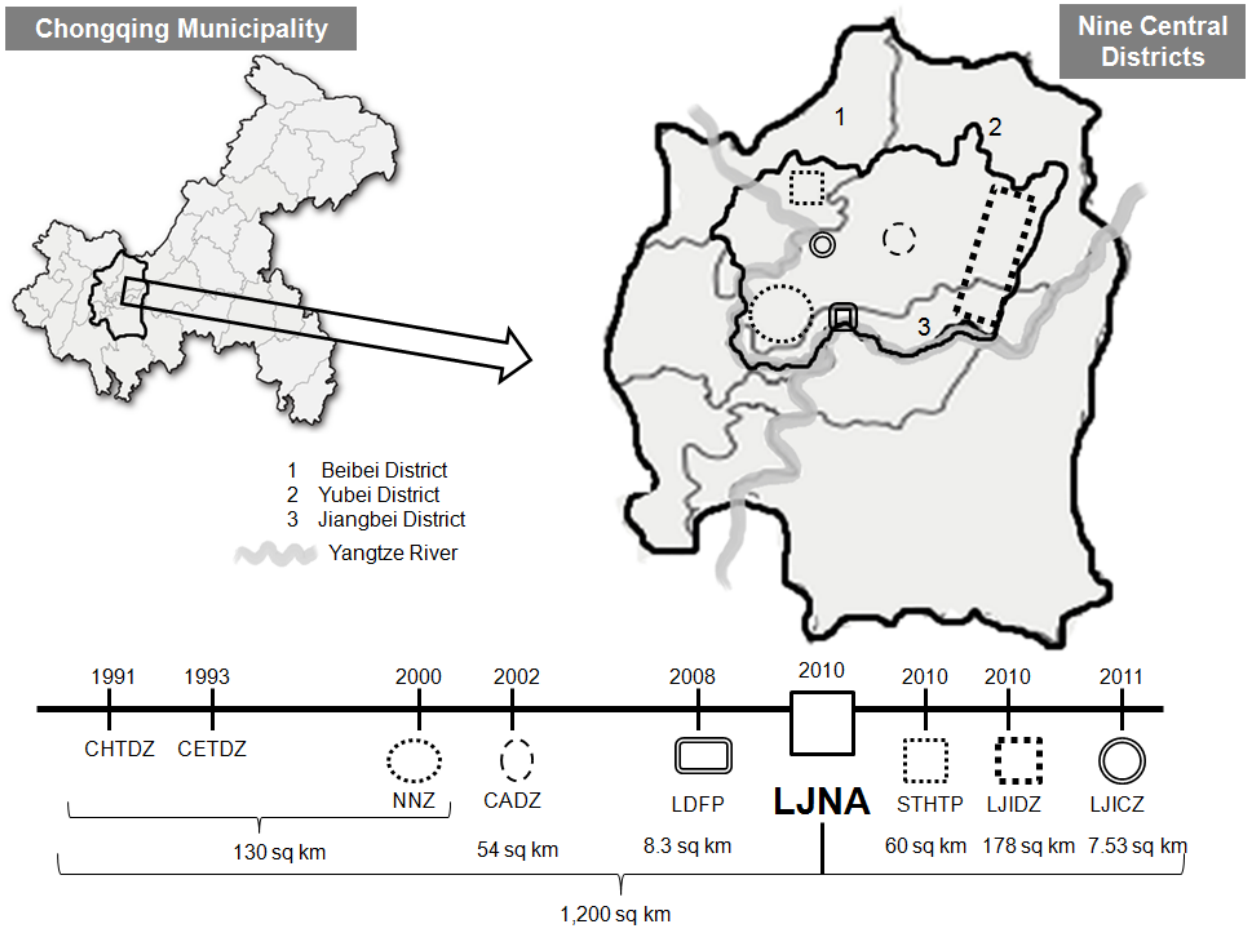
Reterritorialization of Jiangbei, Yubei and Beibei districts to create a new spatial economy

On 10 June 2010 the State Council formally announced approval to create the LJNA as the third national-level new area after Pudong and Binhai (Li 2011). The creation of LJNA rescaled the CADZ, NNZ, LDFP and other administrative units at township level in Jiangbei, Yubei and

Beibei districts. The LJNA is 1,200 square kilometers, of which 888.45 square kilometers are in Yubei district, 154.89 square kilometers are located in Jiangbei district and the remaining 156.66 square kilometers are in Beibei district (CLJNAMC n.d.).

The main governing body of the LJNA is the Liang Jiang New Area Management Committee (Li 2015), headed by the Vice-Mayor of Chongqing, Ling Yueming. Pudong in Shanghai and Binhai in Tianjin are the only national-level new areas where a New Area Party Committee governs economic development, whereas in the rest of these territories decision-making processes are fragmented between management committees and sub-national authorities (Li 2015). The LJNA Committee assumed control over temporalities of land commodification and infrastructure development and soon announced further rounds of land redistricting. In 2010, it announced the creation of another three development zones: the Shuitu High-Tech Park (SHTP) in southern Beibei district, the Liang Jiang International Development Zone (LJIDZ) in eastern Jiangbei and Yubei districts and the Liang Jiang International Center Zone (LJICZ) in Yubei district (CLJNAMC n.d.). Map 6.1 shows the territorialization of power relations in Jiangbei, Yubei and Beibei districts in relation to development zones.

Map 6.1. The Creation of LJNA



Source: CLJNAMC n.d.

The land area of the LJNA represents merely 1.45% of the total land area of Chongqing; however, by the first months of 2012 it represent 16% of the city's GDP (CLJNAMC 2012). In 2010, there were 1,041.5 square kilometers of demolitions and land conversions in Chongqing, most in the LJNA (Zhang 2011, p. 209). The main economic activities within LJNA are light and heavy manufacturing (particularly the automobile industry), real estate, finance and logistics (CLJNAMC n.d.; CLJNAMC 2012). The 60% of land area targeted for new development in LJNA is for manufacturing industries (CLJNAMG n.d.). In 2010, the GDP of LJNA was RMB 100 billion, of which the manufacturing industries contributed 45.8% ('Liang Jiang New Zone 100 days anniversary' 2010). Among them, the automobile industry is the core of industrial

production. In terms of industrial output value, in 2010 it represented 62% of the new area's total. The 85% of the automobiles produced in Chongqing come from factories located in the LJNA; representing 7.3% of the automobiles produced in China (Du 2012; Xia 2011; LJNAC 2011). Chang'an is therefore one of the main agents of production. Besides manufacturing, real estate and finance form the production core of LJNA.

LJNA: spatial economy of the central government

The rescaling of LJNA as a national-level area is a territorial strategy of the central government for accelerating economic development and increasing revenue collection not merely through channeling funds to LDCs for developing projects, but also by making the new area a territorial fiscal exception. The locational overlapping of major infrastructural projects in relation to the increasing production of the automobile and real estate industries in LJNA generate a spatial economy of increasing capital formation. The fiscal regime of this space of rapid economic growth allows the central government to increase profitability of its SOEs, particularly Chang'an and the state banks, and at the same time obtain high revenue from taxes without sharing them with the Chongqing city government. In this section I will first discuss the major infrastructure projects in LJNA in relation to investments and production of the automobile industry, real estate and finance. Then I will discuss the fiscal arrangement of LJNA by which the central government increases its revenues and the profitability of its SOEs.

All major infrastructure projects of LJNA are located in Yubei district and four segments of national expressways form its transportation nerve system. These connect LJNA to other urban areas in major cities located in western and coastal regions. The G50 connects LJNA to Wuhan (1,000 km) and to Shanghai (1,800 km), the G65 connects it to Guangzhou (1,600 km), G75 connects it to Xi'an (850 km), and finally the G93, intersecting with the G5001, connects LJNA to Chengdu (300 km) (YDFTERC n.d.). There are historically complementary chains of production between these two last cities and Chongqing, forming what has been known as the 'Triangle of the West' (西三角 *xi san jiao*) economic region (Lan 2011). The LJNA Committee is developing the Liang Jiang Main Road, an eight-lane road of the road network that will

intersect with G5001 at the north and G50 at the south, connecting all industrial facilities of production of Chang'an within LJIDZ. To the south, Liang Jiang Main Road reaches Guoyan duty-free port, the second port of LJNA (Xia 2011), at the southern part of the new area (YDFTERC n.d.).

Other major transport infrastructure projects in LJNA are railways. The Longtousi Railway Station in Yubei operates trains that connect the new area to other major urban areas at national level. The light-rail (轻轨 *qingggui*) system is a project that connects the main urban areas of the nine central districts. One of its lines is to Jiangbei International Airport, at the heart of LJNA. In 2011, Chongqing Railway Communications opened a second light-rail line connecting the fully-urbanized Yuzhong district to Jiangbei and Yubei districts. There are just three stops in Jiangbei, and the rest are in Yubei (Yi 2012). The Youxin Railway is 11,179 kilometers long and connects the urban core area of Chongqing, including LJNA, to Xi'an and Lanzhou (each of them lodging one national-level new area), then to Urumuqi after which it goes through Kazakhstan, Russia, Belarus, Poland and finally reaching the port of Duisburg, Germany (Shapingba Transportation n.d.), a journey that takes two weeks, 20 days shorter than by sea from the ports of Southern China through Malacca Strait, the Indian Ocean to Europe. It mainly transports automobile spare parts, laptops and light machines. Although the Youxin Railway is located in Shapingba district, outside LJNA, it is reachable in few minutes by expressway.

The spatial relation of expressways, railways, ports and other infrastructure projects facilitate value creation of the three main industries in the new area: automobiles, finance and real estate. Central government SOEs control the automobile and finance industries; however, whereas in real-estate the LDCs and co-investors will be the main beneficiaries of the increasing economic growth in the new area. Chang'an, a central SOE, generates the highest revenue of all SOEs and has the highest market capitalization among all corporations in Chongqing ('Top 100 Companies in Chongqing in 2010' 2011). In 2009 Chang'an registered the highest revenues from sales in Chongqing and western China and was the corporation that contributed the largest share of added-value production in manufacturing and corporate tax, both categories are the main sources of tax in Chongqing and LJNA (Chongqing Financial Bureau 2011a). The three largest Chang'an factories are located in LJNA and produce 33% of the automobiles made in Chongqing ('Chang'an-Ford invests in an engine factory in the New North Zone' 2013). Besides production,

in the NNZ there is an area for automobile sales services, where not just Chang'an, but two other state-owned automobile manufacturers, SAIC and Beijing Automotive Group, operate stores. The 2010-2020 urban plan (2010-2020 plan) for the new zone, sets aside 24.5% of LJIDZ (43.62 square kilometers) for automobile manufacturing, the largest area for a single industry in the new area (CLJNAMC n.d.; CLJNAMC 2012). Chang'an has already started developing two main factories, three research and design centers and retail services facilities. The total investment of these projects is RMB 30 billion, and they are forecast to produce RMB 300 billions worth of automobiles per year ('Chang'an invests RMB 11 billion to construct three big centers' 2014). After developing these projects, Chang'an will have five automobile factories, three engine factories, two research and development centers and one transmission cage producing factory in LJNA ('Huang Qifan: Chang'an Automobile will invest RMB 30 billion in production chain' 2012).

Finance and real-estate have converged in mixed development projects in the eastern part of Jiangbei district, making it the most expensive land area in LJNA. The only area for the finance industry is the financial district of Jiangbei, where all the state banks have their Chongqing branches. Since the establishment of the city at province level, state banks have been excluded from the tax regime; instead they report their taxes directly to the Central Banking Commission in Beijing (Chongqing Financial Bureau 2011a). Approximately 40% of land for construction in LJNA is for real estate (CLJNAMC 2012), being the main project in the 2010-2020 plan the development of the LJICZ. This project will be the second real estate and commercial district in LJNA, after the Guanyinqiao-NNZ in eastern Jiangbei and southern Yubei districts. The LJICZ is a 600,000-square-meters mixed development that combines real-estate and retail sales, and includes the Chongqing International Expo Center (YDFTERC n.d.). This new expo center will hold the annual editions of the Chongqing International Automobile Exhibition, which has been held in Nan'an district since 1998. In 2012, the Chongqing Commercial Daily described LJNA as the main 'battlefield' for real-estate development companies within the city (Li 2012b). The most important real estate projects in terms of investment and value creation are located in the space between the commercial district of Jiangbei district and the Jiangbei International Airport in Yubei district.

Tax regime of LJNA

The central government designed a tax regime for extracting increasing revenues from the buoyant production of its own SOEs, particularly Chang'an, and the accelerated development of real-estate by LDCs that the state banks are funding. Under this tax regime, the central government and LJNA Committee share the revenue of the three main taxes in the new area: the tax on added-value production, the corporate tax and the personal income tax. The Chongqing city government collects no tax revenue from the economically most dynamic space in its own jurisdiction. Figure 6.1 shows the arrangement under which the central government and LJNA Committee share tax collection.

Figure 6.1. Tax regime in LJNA

Tax category	Central Government	Chongqing government	LJNA Management Committee
Added-value production	75%	0%	25%
Corporate tax	60%	0%	40%
Personal income tax	60%	0%	40%

Source: CLJNAMC n.d. p. 16

According to Figure 6.1, the central government collects most of the tax revenues generated in the LJNA: 75% of the added-value production, leaving 25% to the new area committee. The main sources of taxation in this category are the light and heavy manufacturing industries in LJNA, including the automobile sector. The central government collects 60% of the corporate tax, the second category in Figure 6.1, leaving the remaining 40% to the new area committee. The main taxpayer in this category, as in the previous one, is Chang'an (Chongqing Financial Bureau 2011). Therefore, the rescaling of LJNA by the central government territorialized production and taxation of Chang'an for channeling its increasing revenues directly to the central government. Regarding the third tax category in Figure 6.1, the central government also collects 60%, again leaving the remaining 40% to the new area committee. The development of new real estate projects in LJNA by LDCs constitutes an increasingly important source of corporate tax.

Thus, the increasing land value dereived from overlapped major infrastructure projects in the form of high land lease fees is also appropriated by the central government under the same tax regime. After obtaining taxes from Chang'an, the central government can redirect this money capital to its banks and then recycle it in form of banking loans for funding development of new Chang'an factories in LJNA. In the case of banks, these corporations have recently moved their corporate headquarters in Chongqing to the Jiangbei Financial District of LJNA. Thus, the central government can also operate a similar money capital recycling strategy as it does with Chang'an.

The LJNA Management Committee also appropriates a considerable amount of tax for reinvesting in developing projects within the new area. The committee can capitalize its own LDC or create even more corporations and subsidiaries for circulating the money capital obtained from taxation and materialize it in infrastructure development. Thus, the tax regime shown in Figure 6.1 institutionalizes the concentration of money capital circulation within the borders of LJNA. If Chongqing city government had access to the increasing taxes that Chang'an and LDCs are generating in LJNA, it might redirect it for developing projects in other areas of the city, extending time of money circulation, dispersing land value and ultimately reducing the profits of LDCs. The rescaling of LJNA within Chongiqng is therefore a territorial strategy of the central government for increasing economic growth in relation to its own collection of revenue and the subsidizing of costs of production to its own SOEs. Under the same tax regime, it is in the direct interest of the central government to accelerate economic growth in LJNA by extending funds for infrastructure development in the vast rural areas of Yubei and eastern Jiangbei. The reproduction of industrial production and infrastructure development in LJNA is directly related to the tax rate that the central government could obtain.

Spatial trends of economic growth in LJNA

The accelerated economic growth of LJNA, and the inherent increasing sources of tax revenues for the central government, is highly centralized on its southwestern part. This is shown in the model of the Chongqing Urban Exhibition Center that appears in Plate 6.13. On the other hand, the northern and eastern parts of the new area lodge dispersed small light manufacturing facilities, mainly producing cement, food and drugs, and dislocated processes of land commodification in vast rural areas (Yin 2009). Plate 6.14 shows a cement factory in the middle of rural Yubei

district. The assessment of the creation of LJNA in relation to inherited and planned processes resides in the way in which administrative territorial adjustments unfold and reproduce uneven urbanization in Jiangbei and Yubei for carving out new spatio-temporal horizons of production.

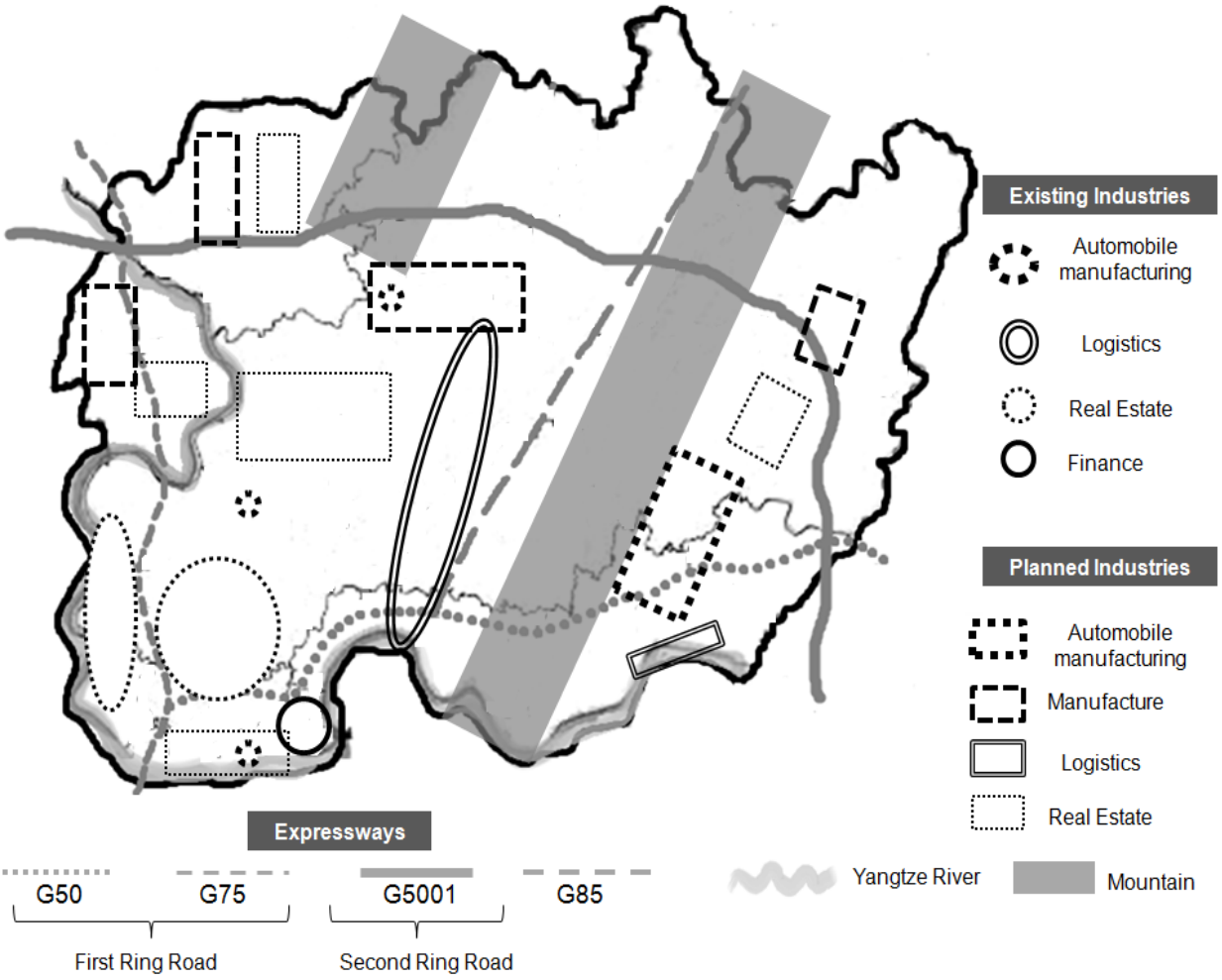
From left: Plate 6.13. The representation of the infrastructure development in LJNA according to the 2010-2020 urban plan. This model is on display in the Liang Jiang New Zone Urban Exhibition Gallery. Plate 6.14. The spatial economy of the vast rural areas in northern Yubei district (right). There are some light manufacturing plants surrounded by mountains and villages.
Photographs by the author

Future economic processes in LJNA

The new projects of the 2010-2020 plan for LJNA aim at increasing the main sources of taxation from where the central government has been extracting revenue since its establishment in 2010: automobile industry and real estate. This section discusses the way in which the new plans of LJNA will extend spatial processes of production that directly increase central government revenues and enhance SOE profitability. Therefore, I will look at the way in which the mentioned two industries are expanding in the vast rural areas of Yubei and Jiangbei districts in relation to other manufacturing industries.

The main goal of the 2010-2020 plan is to unfold land commoditization in the north and eastern parts of LJNA for expanding the automobile, real estate and logistics industries. There are several specific projects that occupy most of the targeted land in the next five years. The Liang Jiang International Automobile City is the territorial extension of the chains of production of existing Chang'an factories (Yin 2009), and it is planned for the large rural areas of eastern Jiangbei district. Jiangbei International Airport, Longtousi Railway Station and the port of LDFP will form a logistics corridor through the middle of LJNA. There are therefore two main infrastructural projects that circumvent Tangluo Mountain to connect the core of production and circulation of LJNA to the vast rural areas of LJIDZ: the G50 and the Yangtze River. The Map 6.2 shows the location of existing and future spaces of capital accumulation in LJNA and major infrastructural projects.

Map 6.2. Present and future of the spatial economy of LJNA



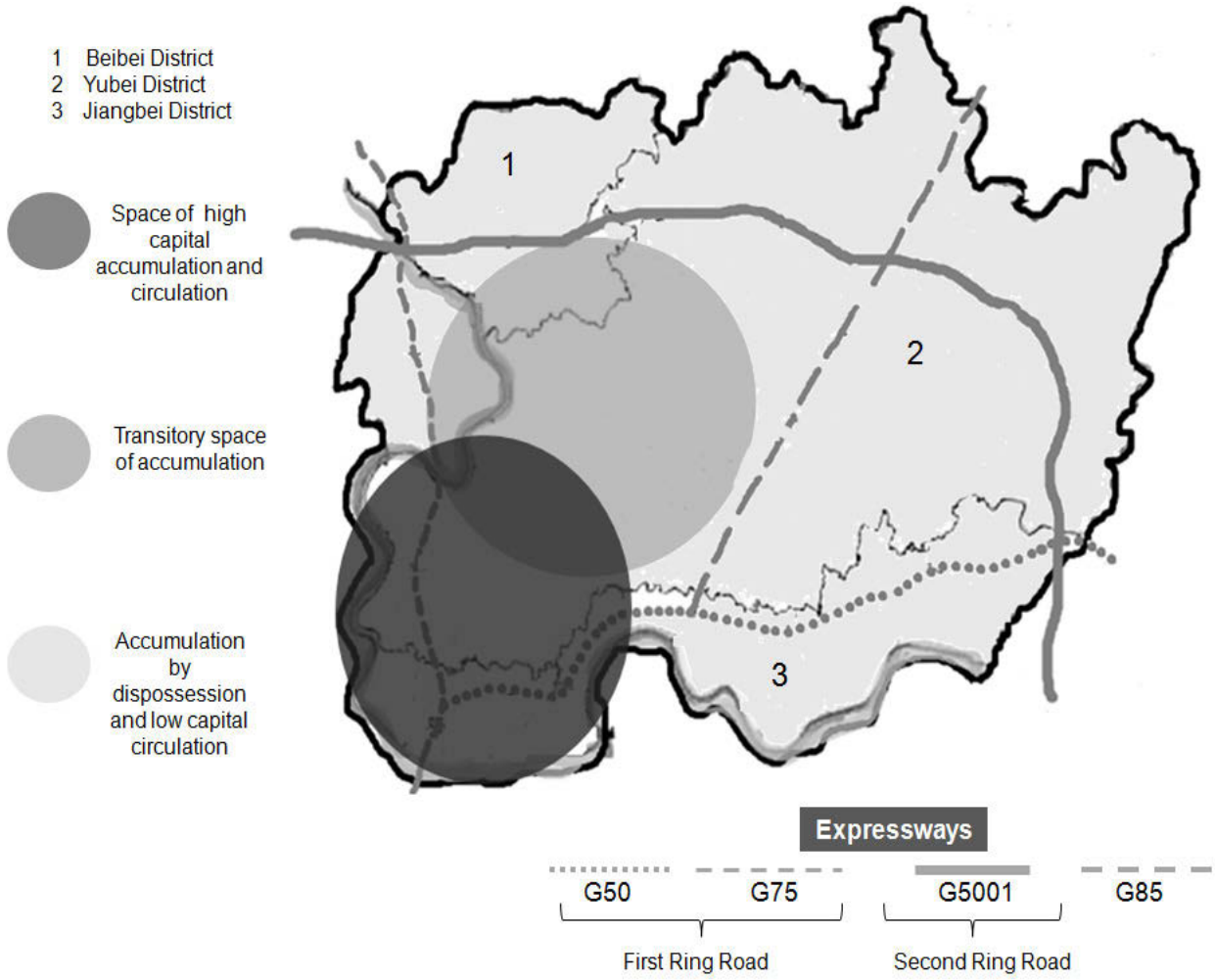
Sources: Qing 2012; CLJNAMG n.d.; CLJNAMG 2012

Map 6.2 shows that the spaces of consumption are near the first ring road, and those of production are between the two ring roads. Economic development in between the first and second ring roads is currently structured by automobile production, real estate development and land commoditization. Meanwhile, most of future spaces for primitive accumulation are outside the near the second city ring road. Beibei district appears in the top left hand corner, mostly targeted for developments of real estate and manufacturing industries. The main area for the automobile industry will be in eastern part of LJNA, on the right of Map 6.2, where Chang'an obtained large areas in Jiangbei and Yubei for new factories. Thus, different processes of production in LJNA are spatially overlapped disgregating rates at which the central government

accumulates revenues through the tax regime in Figure 6.1. We can differentiate the first space at bottom left-hand corner of Map 6.2, western Jiangbei district and southwestern Yubei district. The second space is basically from the boundary of the NNZ with Yubei district to the CADZ and Jiangbei International Airport, as well as part of the southern part of Beibei district. The third space is the rest of the land area of LJNA; this is, all vast rural areas of eastern Jiangbei district, northern Yubei district and the rest of the towns of Beibei district that are within LJNA.

Capital formation in the first space comes mostly from real estate, retail sales, finance industry and logistics. The second space is in transition between production of commodities, intensive capital investments and land commoditization. The third space will see large processes of accumulation by dispossession, though in the future according to the 2010-2020 plan will be a space of industrial production. This does not mean that these processes are mutually exclusive in all spaces. The Map 6.3 shows the location of each space in relation to each other in the land area of LJNA.

Map 6.3. Three spaces of capital accumulation in LJNA



Map 6.3 shows that segments of the G50, G75, G85 and G5001 form a roughly rhomboid rectangular space in which the three spaces of accumulation of LJNA intersect. This space is currently the main source of tax revenue that the central government is collecting from the new area. In this space, capital circulation through production and consumption is high, increasing sources of tax and accelerating transfer of funds to the central government. However, the northern part of the area that the four expressways form is currently the focus of intensive capital investments that seek to expand economic growth and create more sources of tax revenue for the central government, such as the second city center of Chongqing.

Changes in real estate value unfold in relation to the territorial logic in which LDCs and other corporations develop overlapping infrastructure in LJNA. The projects in the NNZ and southern

Yubei district are the most expensive not only in LJNA, but in the city. However, the spatial relations between transport infrastructure, such as the light train and roads of the road network, and other projects under construction between the first and the second ring roads will subsequently produce a space of high real estate value. In other words, these projects will constitute the future sources of reproducing tax revenue collection in favour of the central government. The third space shown in Map 6.3 currently generates the lowest revenues for the central government. Land conveyance fees from land commodification that LDCs collect from here generate lower revenue for the central government compared to southwest of LJNA. Infrastructure development is still in the initial stages and therefore the value of projects is still low. However, the main projects of Chang'an are located in the third space of Map 6.3; in this sense, low land value directly diminishes costs of production for Chang'an.

From left: Plate 6.19. The rural areas of the southern part of LJIDZ, in the eastern part of Jiangbei district. Plate 6.20. Most of the fixed capital in the rural areas of northern Yubei district are light manufacturing facilities or rural houses. Photographs by the author

Expressways as connectors and obstacles

Expressways, as commodities in circulation, will facilitate increasingly the production of the manufacturing industries in the LJIDZ. In the same sense, traffic flow will increase particularly in segments of the G5001, G50 and G85. Expressways toll fees are part of the costs of production or consumption. For example, if a Chang'an cargo truck is going from the CADZ to the LJIDZ via the G5001, the toll fees are part of the cost of production of the automobiles it carries. On the other hand, when a person living in the north of the NNZ goes shopping to Guanyinqiao Commercial District by using any expressway, the toll fee reduces potential consumption. These policies may incentivise circulation and reduce costs, but they also disrupt flows of people and commodities, creating segments of circulation in LJNA.

The case of the G5001, the second city ring road and the only expressway that connects two of the three main industrial areas within LJNA, is a clear example of an expressway that functions as connector or obstacle. The CCB first removed toll posts from the first city ring and in the 2000s reduced toll fees in the second city ring road by creating the 'one-year ticket'. Althought people can use this ticket for paying preferential rates at all segments of the G5001, the CCB still governs flows of people and commodities through this expressway by establishing different discount rates at the toll collection posts. The segments of the G5001 that go through LJNA have larger discounts on the 'one-year ticket' tabulator than the segments that go through other areas of the nine central urban districts (Xu 2012; Liao 2012). At nights a constant flow of cargo trucks loaded with Chang'an cars can be seen circulating in the northern part of the G5001 and G70 inner city ring segment. Thus, by reducing toll fees the CCB subsidizes production and consumption in particular spaces of LJNA. In the case of production, low toll fees will directly reduce Chang'an costs of production when its cargo trucks circulate on the G5001 to transport vehicles out of Chongiqng for selling or linking production processes of all factories in LJNA. Reducing transportation costs, as a part of production costs, directly increases Chang'an's profit rate and consequently the amount of tax it will generate for the central government, under the LJNA tax regime of Figure 6.1.

On the other hand, the G5001 can also function as a barrier by governing the flow of people from the vast rural areas of Yubei. When the CCB removed toll posts from the first city ring, the circulation of people increased in the context of accelerated infrastructure development of

tertiary industries that sought to create consumption in Guanyinqiao commercial district and nearby spaces. The introduction of the 'one-year ticket' on the G5001 and in the context of land commoditization in the northern of the rural areas of Yubei establishes a barrier for controlling population that will fluctuate in the middle of the second and third spaces of capital creation that Map 6.3 shows. However; the projects for creating a third city center in LJNA seek to expand processes of consumption from the Guanyinqiao commercial district to the north of Yubei, suggesting that the CCB could remove the 'one-year ticket' policy to the third ring road. In this scenario, land value in Yubei will drastically increase, boosting corporate profits of LDCs and Chang'an, generating even more tax revenues for the central government.

The creation of LJNA in Chongqing as a project of the central government is a territorial strategy to further streamline processes of capital accumulation derived from the creation of Chongqing as a provincial-level city in 1997. The increasing funds channelled from banks to LDCs for developing projects in this area and the inherited manufacturing base of the automobile industry, established initial conditions for the central government to consider a further rescaling in this space. By establishing the tax regime of figure 6.1, the central government appropriated a large amount of surplus value created from infrastructure development, manufacturing production and accelerated consumption. Moreover, by creating other national-level new areas in western China, the central government will be in position to formulate and coordinate new regional policies to reproduce its own power through boosting integration of chains of production and transportation.

Conclusions

The process of infrastructure development is a strategy of capital accumulation in reform-era China. In this analysis, my conceptualization of the reproduction of economic processes through the spatial administrative hierarchy guides the assessment of the materialization of infrastructure in Chongqing. The state creates surplus value through infrastructure development. All elements of the infrastructural landscape are actually main surplus-value-generating commodities in the general regime of production in reform-era China. Infrastructure development constitutes fixed capital through which the different institutions of the state accumulate wealth. This wealth is either in the form of infrastructural projects, as in the case of LDCs, or in the case of state-owned bank, loans that yield profits on the basis of debt payments. Fixed-capital development also increases tax revenues for all sub-national governments.

In conclusion, I compare how these processes unfold in Chongqing, Shanghai and Tianjin, three provincial-level cities where the central government has created a national-level new area. This comparative assessment places Chongqing at the national scale to contextualize its temporalities and scope of urbanization in relation to the other provincial-level cities. This comparison highlights the central government's national and regional policies as main drivers of spatial transformation in Chongqing and it also underscores the general process of transformation in the national-level new areas of the cities, which points to the unique characteristics that Bo Xilai's patronizing discourse tried to appropriate.

Fixed capital development: a territorial expansion of the Chinese state

The process of funding and developing infrastructure has changed across the reform era. From 1978 to 1992, the process of money commoditization through credit allocation and debt management funded the development of small projects of sub-national governments, mainly at provincial level. These tended to produce small scale urban landscapes that yielded low surplus value. Increasing depreciation of money capital through inflation engulfed the system in a crisis in the late 1980s, forcing the central government to recalibrate the state apparatus that shaped flows of capital.

In the late 1990s, the banking and fiscal reforms restructured credit allocation and debt management, ultimately reshaping the process of producing infrastructure. The central

government operationalized this new institutional architecture for capital accumulation through adjustments to the spatial administrative hierarchy. It reduced the number of counties and at the same time gradually increased the number of districts, as part of a strategy to expand governing capabilities of city governments over resources. The spatial outcome of centralized management of capital allocation with strong city governments materialized in large-scale infrastructure projects, realized in shorter construction times with low inflationary risk.

The central government assumed control of processes of money commoditization in 1998 after the banking reforms of the Zhu Rongji administration. The central government, through the PBOC, MOF, Central Banking Regulatory Commission and the CDB, assumed control of monetary policy, debt management, interest rates, exchange rate policy and credit allocation. In the same sense, adjustments in the territorialization of administrative units during the 1990s and 2000s centralized at different jurisdictional levels control over larger land areas for commoditization and corporate management of LDCs under the control of city governments. These institutional adjustments recalibrated the way in which flows of money capital and land commoditization materialized in accelerated fixed-capital development as a strategy of state wealth formation. In this context, there are now larger LDCs that control large-scale infrastructural projects and receive constant funding from the state-owned banks.

The control of the central government over lending and debt management is the starting point for understanding the increasing capacity of LDCs for planning and developing large infrastructure projects. The big four banks and the CDB effectively function together as a 'financial tool' or arm of the central government through which spatial transformation becomes governed in China through infrastructure development.

The central government controls time horizons of debt and the development of new projects through its banking system. It may manipulate liquid reserves to cover any potential risk of default from a large project or simply extend payment deadlines by altering the loan maturity. In other words, the central government manipulates money commoditization to avoid any structural crisis that might start from either increasing debt of LDCs or rampant inflation caused by constant waves of capital investments. However, this does not imply that China's current regime of capital accumulation through fixed-capital cannot experience a crisis. Nevertheless, the roots of this latent risk are not connected to structural contradictions in capital creation and

accumulation as in a capitalist economy, but by political contradictions in the state apparatus governing the reproduction of economic processes.

The territorial administrative system shapes temporalities of land commoditization and money capital circulation, ultimately defining the spatio-temporal horizons of the urban process in China. The adjustment of boundaries in the spatial administrative system is directly related to the financial capabilities of the sub-national governments for subsidizing LDCs. In the same sense, the LDCs and the banking-system structure debt-wealth relations in the form of loans and infrastructural projects at different scales according to the configuration of territorial power relations. Even in the case of a national-level expressway that transects many administrative units, its segments will have different value creation as a commodity depending on the administrative units through which they pass. For example, two segments of the G65 that connects Inner Mongolia to Guangdong go through Chongqing. The G65 segment that connects Yubei and Yuzhong districts, in the urban core area of the nine central districts, generates approximately three times more toll fees than that which connects Wulong and Pengshui counties, in southeast Chongqing. The Wulong-Pengshui segment in fact generated the lowest profits for CEDC from 2008 to 2011 (Gao & Yan 2012; Gao 2012; Liu & Wang 2013).

Use of the boundaries of the spatial administrative hierarchy and other territorial strategies that the central government deploys to reproduce and govern economic processes of money and land commoditization ultimately establish time-horizons of urbanization. As this dissertation has argued, the State Council governed acceleration of infrastructure development of Chongqing first by establishing the city at province-level and subsequently abolishing its counties to establish urban districts under direct control of the provincial government around the inherited urban core area. Only after 1997, in the context of massive transfers of financial capital as part of national and regional strategies, the Chongqing government and its LDCs materialized uneven and accelerated development of large-scale projects in the region. Thus, the State Council, by reconfiguring power relations between administrative divisions, ultimately shapes time and scale of urbanization in contemporary China.

Boundaries of spatial administrative divisions work as 'limits' for capital circulation and accumulation in relation to fixed capital development. The adjustments in these territorial-administrative 'limits' are directly related to capitalization of LDCs, either banking loans or

subsidies from the sub-national governments, and shape the scope of infrastructure development. The creation of Chongqing is a clear example of how the establishment of limits for a provincial-level city reproduced, albeit unevenly, money and land commoditization, propelling accelerated urban transformation.

The process of land commoditization through primitive accumulation, in the context of the state apparatus governing production of infrastructure, has implications that unfold beyond primitive accumulation. Buck (2007) proposes that in addition to primitive accumulation we should incorporate how production chains are spatially divided to maximize capital accumulation. In the same sense, I argue that infrastructural projects are also commodities that have territorial logics of production and circulation. The rate of surplus value creation of infrastructural projects is not only determined through use by commuters, but also through subsidies and transfers that sub-national governments inject into LDCs which create 'artificial' profits. The spatial relations among infrastructure projects can increase sources of tax revenue for sub-national governments, which ultimately means new spaces from where to carve out revenue that will form new rounds of capital injection. LDCs can employ these profits to attract investors or use the projects themselves as collateral for leveraging more banking loans.

Land commoditization as an initial stage of accumulation of state-owned wealth through infrastructure development is further circulated in the banking system for accumulating more capital. The spatial relations among infrastructure projects increase land value that the banking system converts in monetary terms to grant new loans for LDCs. Hence, urban planning, as a strategy that governs spatial relations among infrastructure projects, is a strategy that accelerates state-owned capital accumulation. For example, the planning of a second city center in Yubei and Jiangbei districts in the early 2000s has meant new projects and high profits for CREG, CUCIC and CEDC, as discussed in Chapter Six. The Chongqing government targeted the north of Yuzhong district as new space for development. From 2003 to 2009, the CREG and CUCIC developed projects in commercial and financial sectors in the area, meanwhile the CEDC developed the second ring road and expressway segments that connected it to the first ring road. By 2009, the real-estate value in Yubei district was higher than that of the historical urban area of Chongqing, Yuzhong district. The CREG and CUCIC, supported by Yufu Securities' debt management capacities, leveraged more loans from banks using their land reserves and projects

as collateral. In tandem, the CEDC accumulated wealth in the form of increasing toll fees it collected from expressway segments in the nine central districts, particularly in Yubei district. The segments of the G5001 and G75 that go through northern Yubei have generated increasing revenues for CEDC.

The development of infrastructural projects in reform era China is the territorial expansion of the state. In other words, expressways, airports, ports and the like reproduce the Party-state institutions in different capacities. Each of those projects enables the national and sub-national governments to create and finance more SOEs that finance and develop infrastructure, maintaining resources circulating within the state-owned economy to the potential detriment of private capitalists and individuals. In other words, the investment intensive economic growth pattern of China reinforces the Party-state control over production and consumption. Development of infrastructure materializes the excess of liquidity of the banking system in form of fixed capital. LDCs are, fundamentally, SOEs whose asset value increases as they obtain surplus value from developing projects framed in national, regional or local urban plans. In this sense, the development of infrastructure is a process that not only increases the wealth of LDCs but also reproduces LDCs themselves in the form of new subsidiaries that operate new projects. Though land commoditization always carves out new spaces for infrastructure development, the cutting edge of accumulation is the banking system. The central government effectively dispossesses household depositors by controlling interest rates and not allowing them earning substantial profits from their bank savings. Thus, households are actually paying the cost of the financial strategies, such governing interest rates, which sustain funding to LDCs and keep the system clear of any risks of money depreciation or overaccumulation.

Capital accumulation through fixed capital development in three provincial-level cities

The creation of Chongqing as a provincial-level city has two main spatial rationales in terms of state-owned capital accumulation and uneven reproduction of urban transformation. The first is the centralization of control over the large-scale land-use conversion to develop the Three Gorges Dam, which generates electricity for the urban centers of the coastal region. The second reason is increase in capital accumulation through expansion of the urban core area of the former

Chongqing prefecture-level city, through the nine central urban districts of the provincial-level city.

The development of Chongqing is illustrative for understanding the way in which changes in territorialization of power relations govern flows of money and infrastructure construction for shaping accelerated and uneven urbanization in reform-era China. When Chongqing was a prefecture-level city in Sichuan province, the provincial government directed flows of capital to develop projects in other administrative units. The governing relationship between the provincial government and prefectural-city authorities contended over credit allocation, taxation and management of SOEs. Hence, when the central government formally established Chongqing as provincial-level city, it also created new 'limits' for capital accumulation and circulation. The adjustment in the territorial administrative system defined Chongqing as a scale of accumulation through accelerated infrastructure development. The CDB and the big-four banks channeled transfers of bank loans as part of central government policies for funding development of major projects in the city.

However, this emerging spatial transformation accentuated inherited uneven development of the administrative area in the northeast and southeast by extending the urban core of the nine central districts. The way in which the Chongqing city government and its LDCs have managed increasing asset values amidst growing unevenness in spatial transformation is different to how other provincial-level cities structure their strategies for their own jurisdictions. Although temporalities of capital accumulation in all these cities is determined by central government control over the main sources of money capital, their governments structure different arrangements for managing LDCs and state-owned wealth. I will briefly compare the way in which this process in Chongqing is different from those in Shanghai and Tianjin, as places of high capital accumulation where the central government has created national-level new areas.

Comparative assessment of LDCs

LDCs in provincial-level cities can achieve accelerated capital accumulation through fixed capital development not only because the central government channels vast amount of loans and transfers to those territories as part of national and regional policies. Even though they share

similar territorial configurations, provincial-level cities have different approaches to managing LDCs. The main difference between LDCs management system between is that the Shanghai government has adopted a decentralized approach to LDCs, whereas Chongqing and Tianjin governments have similar structures for their corporations.

Although Shanghai has 16 districts and just one county, the management of LDCs is not the exclusive prerogative of the province-level city government and each district government has several under its control. The Shanghai State-owned Assets Supervision and Administration Commission (SSASAC) has under its direct control six LDCs, but in the city there are 111 total in operation. However, two of them, Shanghai Urban Construction Investment Corporation (SUCIC), the first LDC in China, and Shanghai Jiushi Corporation (SJC), concentrate the greatest assets value of the city (Tan et al. 2012; Wang & Zhao 2010). The rest of the LDCs in Shanghai are under control of district governments, including the PNA, which has its own state-owned assets governing institutions: the Pudong District State-owned Assets Supervision and Administration Commission (Xinhua 2012; Tan et al. 2012; Wang & Zhao 2010). Even though the State Council has gradually rescaled territorial administrative arrangements in Shanghai by merging districts, the province-level city government has not systematically abolished the district governments' LDCs.

The governments of Chongqing and Tianjin have centralized control over LDCs by merging or abolishing them, which has concentrated their asset value and increased their financial capacities. The Chongqing government created CSASAC in 2003 and restructured eight existing LDCs under the 'big eight corporations' managing scheme. These corporations received vast funds, mainly from the CDB, in the context of national and regional policies since 2000.

In Tianjin, centralization of LDCs is recent. In 2009, each of the district governments, and even the committees of the city development zones, had dozens of LDCs developing and operating small projects. In 2010, the provincial government of Tianjin started to merge or abolish them for combining their assets. The result was the creation of TUIDIC, the city LDC. This corporation managed assets worth RMB 350 billion, becoming the largest subnational LDC in China in terms of assets value (Li 2011; 'The investment platforms of Tianjin authorized the special purpose company concept' 2010; CHW 2013).

Chongqing and Tianjin have registered the highest real GDP growth in China from 2001 to 2012 in the context of accelerated capital accumulation through infrastructure development by LDCs (China Bureau of Statistics 2009). The accelerated economic growth in these two cities at provincial level is the product of the relationship between the flows of preferential money capital provided by state-owned banks and its realization in the form of fixed capital by LDCs in the context of centralized territorial power relations.

Although LDCs in Shanghai, Tianjin and Chongqing develop and operate infrastructure in different sectors in their respective cities, there are specific spaces of accelerated capital accumulation from where they collect increasing revenues. These spaces are the national-level new zones that the central government created as territorial strategy for increasing economic growth. However, there are also particularities in each of these new areas that differentiate them in terms of main industries, time horizons for fixed-capital development and their spatial relation to larger economic regions in the national context.

Comparative assessment of three national-level new areas

The comparison of the first three national-level new areas presented in Figure 7.1 establishes different variables for assessing their differences as spaces for state-owned capital accumulation in relation to fixed capital development. The creation of national-level new areas as territorial strategy by the central government within provincial-level cities increases financial leverage and subsidies for LDCs, yet at the same time also reproduces spatial concentration of wealth and increases revenues both for city governments and their LDCs. Figure 7.1 presents seven variables for comparing spatial economic processes in three generations of national-level new areas in Shanghai, Tianjin and Chongqing.

Figure 7.1. Three generations of national level new areas

Variable	PNA (Shanghai) Created in 1992	BNA (Tianjin) Created in 2009	LJNA (Chongqing) Created in 2010
Size of land area	1,190 square kilometers. 18.7% of total land area of Shanghai	2,268 square kilometers. 19.5% of total land area of Tianjin	1,200 square kilometers. 1.4% of total land area of Chongqing
Territorial power relations	Sub-provincial level. The State Council merged four districts and a county	Sub-provincial level. The State Council merged three districts	Sub-provincial level. The State Council rescaled power relations of parts of three districts
Main transport infrastructural projects	Cargo port (the largest in the world in terms of containers moved in 2012), international airport, five subway lines and a national-level expressway segment	Cargo port (the tenth largest in the world in terms of containers moved in 2012), international airport, one subway line and a national-level expressway segment	Inland cargo port, international airport, one subway line and four national-level expressway segments
Share of the provincial-level city economy	30% of the economy of Shanghai in 2012	50% of the economy of Tianjin in 2012	25% of the economy of Chongqing in 2012
Main industries	Finance, real estate, tourism, automobile industry and logistics	Finance, real estate and logistics.	Light and heavy manufacturing (automobile and motorcycle industries) and real estate
Connection to economic regions	The Yangtzi river delta.	The Bohai economic rim	Chengdu-Chongqing economic region. 'Triangle of the west' (Chengdu-Chongqing-Xi'an).
Assets management in relation to corporate governance of LDCs	Dispersed. PNA Committee operates its own LDC, besides the other LDCs	Centralized. The bulk of the fixed assets are under control of a single LDC	Flexible. The 'big eight corporations' control most of the fixed assets

Sources: 'Development Models and Comparison of State-level New Areas' 2011; Spur 2011; World Shipping Council, 2013; Li 2011; BNALRA n.d.; LJNAC 2011; PNAG 2010; TTPA 2014; CHW 2013; Tan, et. al. 2012

Figure 7.1 shows the first three national-level new areas that are in provincial-level cities work as heterogeneous spaces of capital accumulation, although they share similar configurations of territorial power relations in relation to the nested hierarchies that define them as scales. The PNA and BNA each represent a considerable share of the land area of their cities and they also centralize economic processes in comparison to LJNA, which occupies a much smaller proportion of Chongqing's land area .The new area with the most centralized space of accumulation in relation to the overall economy of its host city is the BNA. In contrast, capital accumulation of the PNA and LJNA is not the main economic engine in the spatial economic context of Shanghai or Chongqing. In the case of the LJNA, it has produced more capital than any other administrative unit in Chongqing in the past three years, considering that it represents just the 1.4% of the city land area.

The PNA and BNA share a similar industrial profile of production. Both spaces of accumulation are relying on fixed capital development of tertiary industries. But the LJNA inherited manufacture base from the Maoist era still plays a central role in production. The automobile industry is an economic pillar that the PNA and LJNA have in common; SAIC in the case of the former and Chang'an in the case of the latter. The Shanghai province-level city government is the major stakeholder of SAIC and has subsidized it since the 1990s to consolidate it as one of the main sources of capital accumulation in Shanghai (Thun 2006). Chang'an is the main automobile maker of LJNA, but its major stakeholder is a central government SOE. The transport infrastructure that goes through LJNA provides more connections to other regions than the infrastructure in the PNA or BNA. The two coastal national-level new zones have world-leading ports that connect flows of commodities to the world economy; however, these two new areas are not connected as the LJNA is to other regions within China. The creation of LJNA in Chongqing by the central government was a strategy for increasing capital accumulation in a context of dynamic and accelerated development of infrastructure and arrival of investments.

Western China: horizons of new research

The process of urban spatial transformation in contemporary China is simultaneously centralized under capital allocation framed in national-level strategies and materialized by a multiplicity of state-owned corporate arrangements and land commoditization. This process reproduces the state in its corporate form (by creating more SOEs and subsidiary corporations), in its financial form (by issuing more banking loans that the household deposits subsidize) and its infrastructural form (by developing expressways and other infrastructural projects). The particular characteristics of western China in population, environment and natural resources make its urban transformation a different case in comparison to the coastal region. These differences are not associated with any of Bo Xilai's policies. Furthermore, administrative units in western China have been included in other national and regional central government policies for mobilizing capital for infrastructure development, producing further concentration of state wealth at different scopes. Such is the case of the creation of national-level new areas in Xi'an, Lanzhou and Guiyang in Shanxi, Gansu and Guizhou provinces respectively. The assessment of spatial transformation of the vast interior rural areas of China will provide more insights about the multiple particularities in which the national urban process is taking place.

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